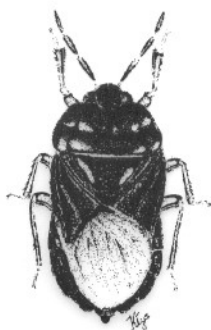


JERZY A. LIS

**A REVISION OF ORIENTAL BURROWER BUGS**  
**(*HETEROPTERA: CYDNIDAE*)**



BYTOM 1994

The project "*A revision of Oriental burrower bugs (Heteroptera: Cydnidae)*" was sponsored by the Alexander von Humboldt Foundation (Bonn, Germany).

© Copyright by the Upper Silesian Museum, Bytom

ISBN 83-901173-1-2

Issued 31 July 1994



# CONTENTS

ABSTRACT .....	5.
GENERAL PART .....	7.
Introduction .....	7.
Classification of family .....	7.
Characters of systematic importance .....	9.
Concept of genera .....	12.
Biological data .....	12.
Material and methods .....	12.
Study area .....	13.
Acknowledgments .....	14.
SYSTEMATIC PART .....	14.
<i>Garsauriinae</i> .....	15.
<i>Scaptocorinae</i> .....	19.
<i>Cephaloctenini</i> .....	20.
<i>Scaptocorini</i> .....	22.
<i>Sehirinae</i> .....	40.
<i>Amaurocorini</i> .....	41.
<i>Sehirini</i> .....	45.
<i>Cydninae</i> .....	49.
<i>Cydnini</i> .....	49.
<i>Geotomini</i> .....	120.
REFERENCES .....	281.
INDEX OF TAXA .....	291.
FIGURES .....	293.

*To my wife, Barbara*

## ABSTRACT

The paper contains the first revision of the family Cydnidae in the Oriental Region since the end of the XIXth century. The taxonomy of the family is treated in detail at each systematic level. Representatives of four subfamilies (Garsauriinae, Scaptocorinae, Cydninae and Sehirinae) are recognized in the studied area. Altogether 180 species representing 36 genera are described and figured on the basis of the examination of over 6500 specimens.

The following new taxa are described: *Stibaropus javanus*, *S. struempeli*, *S. sumatranus* spp. n., *Chilocoris costatus*, *C. franzi*, *C. heissi*, *C. indicus*, *C. pauli*, *C. similis*, *C. sulawesicus*, *C. birmanus*, *C. brunneus*, *C. longicephalus*, *C. martensi*, *C. montanus*, *C. muticus*, *C. nepalensis*, *C. nitidulus*, *C. philippinensis*, *C. thaicus*, *C. biliranus*, *C. bosmansii*, *C. campbelli*, *C. duffelsi*, *C. pseudopiceus*, *C. sulcatus*, *C. sumatranus*, *C. vanstallei*, *C. wallacei* spp. n., *Cydnopeltus luzonicus* sp.n., *Orientocydnus* subgen. n., *Cydnus borneensis* sp. n., *Parachilocoris borneensis*, *P. luzonicus*, *P. mariani*, *P. navus* spp. n., *Adrisa rawlini*, *A. romani* spp. n., *Aethoscytus* gen. n., *Aethoscytus baloni*, *A. secundus* spp. n., *Aethus kartaicus* sp. n., *Alonips mirabilis*, *A. taiwanicus* spp. n., *Fromundiellus* gen. n., *Fromundus impunctatus*, *F. pseudopacus* spp. n., *Barbaraethus* subgen. n., *Geotomus coiminatoricus*, *G. hildegardae* spp. n., *Lactistes chinensis*, *L. minutus*, *Microporus vietnamicus* spp. n., *Paraethus ajmericus* gen. et sp. n., *Macroscytus bipunctatus*, *M. borneensis*, *M. dalawanus*, *M. sumatranus*, *M. vietnamicus* spp. n., *Aethiellus* subgen. n., *Pseudoscoparipes birmanus*, *P. fraterculus*, *P. himalayensis*, *P. kinabalensis*, *P. nigratus*, *P. obscurus*, *P. schaeferi* spp. n., *Scoparioides ceylonicus*, *S. curviductus* spp. n.

Lectotypes are designated for 41 species, namely *Cephaloctenus melolonthoides* SCHIÖDTE, *Sehirus orientalis* DISTANT, *Chilocoris nitidus* MAYR, *C. pusillus* HORVÁTH, *Cydnopeltus horvathii* SIGNORET, *Cimex tristis* FABRICIUS, *Drupadia typica* DISTANT, *Nishadana umbrosa* HORVÁTH, *Parachilocoris dispar* HORVÁTH, *Cimex brevipennis* FABRICIUS, *Pullneya meracula* HORVÁTH, *Aethus foveolus* DALLAS, *Geotomus (Alonips) abdominalis* SIGNORET, *G. birmanus* BREDDIN, *Cydnus varians* FABRICIUS, *Aethus cyrtomenoides* DOHRN, *A. omicron* WALKER, *Geocnethus biimpressus* HORVÁTH, *G. flavirostris* HORVÁTH, *Sehirus breviceps* HORVÁTH, *Brachysolen opacus* HORVÁTH, *Fromundus opacus* DISTANT, *Aethus pygmaeus* DALLAS, *A. nanulus* WALKER, *Geotomus subtristis* BUCHANAN WHITE, *G. jucundus* BUCHANAN WHITE, *G. lethierryi* SIGNORET, *Gampsotes parallelus* SIGNORET, *Cydnus perpunctatus* SIGNORET, *Lactistes truncatoserratus* SIGNORET, *L. latus* DISTANT, *L. rastellus* SCHIÖDTE, *Aethus aequalis* WALKER, *Macroscytus japonensis* SCOTT, *M. pfeifferi* SIGNORET, *Aethus subaeneus* DALLAS, *Acatalectus transversus* WALKER, *Cydnus brunneus* FABRICIUS, *Macroscytus javanus* MAYR, *Aethus scutellatus* DOHRN.

A neotype is designated for *Adrisa nigra* AMYOT & SERVILLE.

The following new synonymies are proposed: *Schiodtella* SIGNORET, 1882 = *Stibaropus* DALLAS, 1851; *Amaurocoris* sg. *Hispidocydnus* LINNAVUORI, 1993 = *Linospa* SIGNORET, 1884; *Macroporus* UHLER, 1876 = *Chilocoris* MAYR, 1864; *Statanus membranaceus* DISTANT, 1908 and *Nishadana membranatus* AHMAD, MOIZUDDIN & KHAN, 1977 = *Chilocoris assmuthi* BREDDIN, 1904; *Adrisa maxima* ŠTUSÁK, 1991 = *Adrisa magna* (UHLER, 1861); *Cydnus bengalensis* LETHIERRY, 1891 = *Aethus nepalensis* (WESTWOOD, 1837); *Geotomus minor* HSIAO, 1977 = *Alonips acrostictus* (Distant, 1918); *Geotomus abdominalis* SIGNORET, 1883 and *G. birmanus* BREDDIN, 1912 = *Alonips apicalis* (DALLAS, 1851); *Geotomus yunnanus* HSIAO, 1977 = *Fromundiellus maurus* (DALLAS, 1851); *Brachysolen* HORVÁTH, 1919 = *Fromundus* DISTANT, 1901; *Geotomus oblongatus* HSIAO, 1977 = *Fromundus biimpressus* (HORVÁTH, 1919); *Sehirus breviceps* HORVÁTH, 1919 = *Fromundus flavirostris* (HORVÁTH, 1919); *Brachysolen opacus* HORVÁTH, 1919 = *Geotomus opacus* DISTANT, 1908; *Geotomus lethierryi* SIGNORET, 1883 and *G. macroevaporatorius* MOIZUDDIN & AHMAD, 1990 = *Fromundus pygmaeus* (DALLAS, 1851); *Geotomus nigratus* MOIZUDDIN & AHMAD, 1990 = *G. perpunctatus* (SIGNORET, 1881); *Opatrocydnus* BREDDIN, 1900 = *Katakadia* DISTANT, 1899; *Opatrocydnus cryptocephalus* BREDDIN, 1900 = *Katakadia caliginosa* (WALKER, 1867); *Macroscytus longirostris* BERGROTH,

1915 and *Lactistes longirostris* HSIAO, 1977 = *Lactistes truncatoserratus* SIGNORET, 1880; *Lactistes vicinus* SIGNORET, 1880 = *L. rastellus* SCHIÖDTE, 1847; *Cydnus germanus* BREDDIN, 1912 = *Microporus laticeps* (SIGNORET, 1882); *Philapodemus* KIRKALDY, 1910 = *Macroscyctus* FIEBER, 1860; *Macroscyctus expansus* SIGNORET, 1883 = *M. badius* (WALKER, 1867); *Aethus snelleni* LIS, 1991 = *Pseudoscoparipes vollenhoveni* (SIGNORET, 1881).

Seven objective synonymies are found, namely *Nishadana membranatus* MOIZUDDIN & AHMAD, 1990 = *N. membranatus* AHMAD, MOIZUDDIN & KHAN, 1979; *Cydnopeltus* SIGNORET, 1883 = *Cydnopeltus* SIGNORET, 1882; *Cydnopeltus horvathi* SIGNORET, 1883 = *C. horvathii* SIGNORET, 1882; *Geotomus peshawarensis* MOIZUDDIN & AHMAD, 1990 = *G. peshawarensis* AHMAD, MOIZUDDIN & KHAN, 1979; *Lactistes truncato-serratus* SIGNORET, 1881 = *L. truncatoserratus* SIGNORET, 1880; *Lactistes vicinus* SIGNORET, 1881 = *L. vicinus* SIGNORET, 1880; *Macroscyctus javanus* MAYR, 1868 = *M. javanus* MAYR, 1866.

31 new species-genus combinations are made, as follows: *Schiodtella secunda* LIS = *Stibaropus secundus* (LIS), *Macroporus repetitus* UHLER = *Chilocoris repetitus* (UHLER), *Macroscyctus multisetosus* NOUALHIER = *Aethoscyctus multisetosus* (NOUALHIER), *Aethus foveolus* DALLAS = *Aethoscyctus foveolus* (DALLAS), *Geotomus acrostictus* DISTANT = *Alonips acrostictus* (DISTANT), *Aethus apicalis* DALLAS = *Alonips apicalis* (DALLAS), *Geotomus microevaporatorius* MOIZUDDIN & AHMAD = *Alonips microevaporatorius* (MOIZUDDIN & AHMAD), *Geotomus subrotundus* BREDDIN = *Alonips subrotundus* (BREDDIN), *Geotomus intrusus* E. WAGNER = *Alonips intrusus* (E. WAGNER), *Geotomus parallelus* MANCINI = *Alonips parallelus* (MANCINI), *Geotomus rugosulus* SIGNORET = *Alonips rugosulus* (SIGNORET), *Geotomus orientalis* JEANNEL = *Alonips orientalis* (JEANNEL), *Aethus maurus* DALLAS = *Fromundiellus maurus* (DALLAS), *Geotomus peshawarensis* AHMAD, MOIZUDDIN & KHAN = *Fromundiellus peshawarensis* (AHMAD, MOIZUDDIN & KHAN), *Aethus picinus* STAL = *Fromundus picinus* (STAL), *Aethus difficilis* STAL = *Fromundus difficilis* (STAL), *Aethus parcimonius* SIGNORET = *Fromundus parcimonius* (SIGNORET), *Pentatoma hirtipes* PALISOT DE BEAUVOIS = *Fromundus hirtipes* (PALISOT DE BEAUVOIS), *Geotomus theano* LINNAVUORI = *Fromundus theano* (LINNAVUORI), *Geotomus bicornis* LINNAVUORI = *Fromundus bicornis* (LINNAVUORI), *Aethus glaber* SIGNORET = *Fromundus glaber* (SIGNORET), *Geotomus montanus* LINNAVUORI = *Fromundus montanus* (LINNAVUORI), *Geotomus rugicollis* LINNAVUORI = *Fromundus rugicollis* (LINNAVUORI), *Geotomus fraterculus* LINNAVUORI = *Fromundus fraterculus* (LINNAVUORI), *Geocnethus biimpressus* HORVÁTH = *Fromundus biimpressus* (HORVÁTH), *Geocnethus flavirostris* HORVÁTH = *Fromundus flavirostris* (HORVÁTH), *Aethus pygmaeus* DALLAS = *Fromundus pygmaeus* (DALLAS), *Cydnus perpunctatus* SIGNORET = *Geotomus perpunctatus* (SIGNORET), *Hahnia gibbula* ELLENRIEDER = *Macroscyctus gibbula* (ELLENRIEDER), *Cydnus vollenhoveni* SIGNORET = *Pseudoscoparipes vollenhoveni* (SIGNORET), *Aethus scutellatus* DOHRN = *Scoparipoides scutellatus* (DOHRN).

*Macroscyctus aequalis* (WALKER) and *M. javanus* MAYR are treated as distinct species. *Alonips* SIGNORET is restored to a separate genus. *Fromundus opacellus* is proposed as a new name for the preoccupied *Geotomus opacus* DISTANT. Céphaloctéaires MULSANT & REY is emended to *Cephaloctenini* MULSANT & REY, and *Chilocoris ritzemae* (SIGNORET) to *C. ritzemai* (SIGNORET).

Characters of systematic importance, which are useful in identification of taxa are discussed, and a concept of genera is presented. Notes on the classification and the biology of the family are provided. A complete bibliography to Oriental *Cydnidae*, an index of taxa, and original keys to subfamilies, tribes, genera and species are also included.

**Key words:** *Heteroptera*, *Cydnidae*, Oriental Region, revision, taxonomy, new taxa, new synonymies, new combinations, distribution.

## GENERAL PART

### INTRODUCTION

The first two species of *Cydnidae* from the Oriental Region (*Cimex tristis* and *Cimex brevipennis*) were described by FABRICIUS (1775 and 1798, respectively), followed by WESTWOOD (1837) who described a further three Oriental species (*Cydnus indicus*, *C. nepalensis* and *C. latipes*), and BURMEISTER (1834) who described one (*Cydnus transversus*). The papers of AMYOT & SERVILE (1843), SCHIÖDTE (1843, 1847), DALLAS (1851), DOHRN (1860), WALKER (1867, 1868), VOLLENHOVEN (1868a, 1868b) and STÅL (1876) are also worth a mention among those in which the Oriental species were dealt with.

The first revision of the family, including also its Oriental representatives, was presented by SIGNORET (1881d, 1881e, 1882c, 1882d, 1882e, 1883a, 1883c, 1883d, 1883e, 1884a, 1884b), who tried to compile all the knowledge on the World *Cydnidae* known at that time. Unfortunately, a considerable nomenclatural confusion involving Oriental species of the family began from these papers. Over a dozen Oriental taxa were omitted and many errors introduced. Numerous species were placed in the wrong genera and some genera in the wrong subfamilies. Nevertheless, SIGNORET'S revision was the most comprehensive study on Oriental representatives of the family, upto that time.

The last major World catalogue of the family was prepared by LETHIERRY & SEVERIN (1893), but it repeated all SIGNORET'S errors and misleading nomenclature.

Further important contributions to the taxonomy and faunistics of Oriental burrower bugs were presented by DISTANT (1899a, 1899b, 1901a, 1901b, 1902, 1908, 1918), ATKINSON (1887), MAXWELL-LEFROY (1909), MAXWELL-LEFROY & HOWLETT (1909), KIRKALDY (1910a, 1910b), BREDDIN (1900, 1904, 1906, 1909, 1912), BERGROTH (1915), and HORVÁTH (1919). After these papers there was almost a fifty years break in studies on Oriental *Cydnidae*.

The more recent papers have presented mainly descriptions of new species (FROESCHNER, 1967; HSIAO et al., 1977; AHMAD & MOIZUDDIN, 1980; MOIZUDDIN & AHMAD, 1990). In two of them (HSIAO et al., 1977; MOIZUDDIN & AHMAD, 1990) the authors tried to give a revision of *Cydnidae* from China and the Indo-Pakistan area, respectively. Unfortunately, both papers repeated the old erroneous nomenclature.

In the most recent papers (LIS, 1990a, 1990b, 1991a-1991f, 1992a, 1992b, 1993a, 1993b) several corrections of the old nomenclature, descriptions of new taxa and revisions of few genera, based on detailed studies of the primary type material, were presented.

The aim of the present revision is to clear up the confused taxonomy of the *Cydnidae* in the Oriental Region, redefine all species and genera known from this area, and provide keys for the identification of all Oriental taxa of the family.

### CLASSIFICATION OF FAMILY

The first true genus of *Cydnidae* (*Cydnus*) was described by FABRICIUS (1803) and originally contained 15 species (some of which have subsequently been assigned to other pentatomoid families). In 1820, BILLBERG proposed the name "*Cydnides*" for this group of species. It was the historical beginning of the family name. Then, in a paper of AMYOT & SERVILE (1843), genera were arranged into two groups, differing in the shape of anterior tibiae - the "*Cydnides*" (anterior tibiae broad, expanded, with strong spines) and the "*Sehirides*" (anterior tibiae slender, without strong spines). Such a division based on this character was accepted and

used by STAL (1864), who latinized the names, and then by almost all subsequent authors.

In the introduction to his World revision of the family, SIGNORET (1881d) proposed to separate these two groups on the basis of the presence vs. absence of setigerous punctures on the head and prothorax. The following features were regarded by SIGNORET (op. cit.) to recognize the family within *Pentatomoidea*: head more or less flattened with margins more or less ciliated, elytra not covered by scutellum, legs more or less spinose, anterior tibiae more or less broadened distally and apically with the impression surrounded by a line of many short, stiff hairs. *Cydninae* and *Sehirinae* were for a long time the only categories within the family, until HART (1919) erected the tribe *Amnestini* for the genus *Amnestus* (the only cydnid genus with the claval commissure).

FROESCHNER (1960a) regarded the expanded anterior tibiae and the presence of setigerous punctures on the head and thorax as features adaptive to a burrowing habit, and, based on the arrangement of trichobothria and hind wing venation, recognized five subfamilies of *Cydnidae*: *Amnestinae* (raised from tribal level), *Garsaurinae* and *Scaptocorinae* (described as new), *Cydninae* and *Sehirinae*. The family *Cydnidae* was defined by him (FROESCHNER, 1960a) as a group possessing distinct spines on the more or less flattened anterior tibiae, a fringe of close-set bristles on the apices of the middle and posterior coxae (coxal combs), and the spiracle located in the membranous anterior part of the second sternite.

In 1963, E. WAGNER on the basis of the structure of male and female genitalia downgraded *Scaptocorinae* to the tribe level within the subfamily *Cydninae*, and erected two new tribes - *Geotomini* in *Cydninae*, and *Amaurocorini* in *Sehirinae*. He (op. cit.) included also the family *Thyreocoridae* (which FROESCHNER, 1960a accepted as being a separate family from *Cydnidae*) as a subfamily in the *Cydnidae*.

DOLLING (1981) defined the *Cydnidae* as a family in which all species have coxal combs, a metathoracic wing stridulitrum, and stout bristles on the tibiae, and he proposed a new classification for it. He (op. cit.) recognized eight subfamilies: *Thaumastellinae* (previously treated as a separate lygaeid, then as a pentatomoid family), *Amnestinae*, *Thyreocorinae*, *Corimelaeninae* (previously treated as either a synonym of *Thyreocoridae* or a separate family), *Cydninae*, *Scaptocorinae*, *Sehirinae* and *Garsaurinae*.

Seven years later, SCHAEFER et al. (1988) proposed also *Parastrachiinae* (with the only genus *Parastrachia* Dist.) to include as a subfamily in *Cydnidae*. Nevertheless, the authors were aware that placing *Parastrachia* in the *Cydnidae* as a subfamily rendered the family (sensu DOLLING, 1981) undefined, because *Parastrachia* lacks the coxal combs. However, as was noticed by SCHAEFER et al. (1988) also *Cyrtocoridae* (a member of the "cydnoid complex" - see below) has coxal combs; thus this character does not uniquely defined the *Cydnidae*. The metathoracic wing stridulitrum (the second feature used to characterize the *Cydnidae*) may be plesiomorphic (SCHAEFER et al., 1988) and thus can not define the family (sensu DOLLING, 1981).

As one can see from the above facts, the internal classification of the *Cydnidae* is somewhat complicated, and the problem of what groups should be included within the family is still an open question, because no-one has ever understood the entire superfamily *Pentatomoidea* (to which the *Cydnidae* belongs) phylogenetically, and a reliable autapomorphy for the family has not yet been found. Among the superfamily *Pentatomoidea*, as has already been suggested by SCHAEFER (1981, 1988) and SCHAEFER et al. (1988), there is a well defined group of



families, which could be separated from *Pentatomoidea* sensu lato fairly easily. This group of so called "primitive" pentatomoids or the "cydnoid-complex" (all its members show cydnid affinities), might include, according to the suggestions of SCHAEFER (1981, 1988, pers. inform.), SCHAEFER et al. (1988) and my own studies (Lis, unpublished): *Cydnidae* (sensu FROESCHNER, 1960a), *Thaumastellidae* (-inae), *Thyreocoridae* (-inae), *Corimelaeninae* (-idae), *Parastrachiinae* (-idae), *Plataspidae*, *Megarididae*, *Canopidae*, *Cyrtocoridae* and *Lestoniidae*. The last five of these unquestionable require family status and according to the opinion of JACOBS (1989) and also SCHAEFER (1993) *Thaumastellidae* should be treated again as a separate family, because it is the only pentatomoid group with an m-chromosome. *Parastrachiidae* is also probably a good separate family (C.W. SCHAEFER, letter March 14, 1991); even when creating a subfamily for *Parastrachia*, SCHAEFER et al. (1988) wrote: "This is a provisional decision, pending a cladistic analysis of the *Cydnidae* and its relatives". There are also some evidences that *Thyreocoridae* should also have family status, with two subfamilies - *Corimelaeninae* and *Thyreocorinae* (SCHAEFER, 1988); though AHMAD & McPHERSON (1990) questioned separation of these two groups at the subfamily level.

Nevertheless, the above mentioned problem can be solved neither in this paper (its aim is very different) nor in the very near future. A lot of very detailed studies needs to be done before final and satisfactory results (i.e. the classification of the whole "cydnoid-complex") can be obtained. Thus, in the present revision I follow the general classification of the *Cydnidae* proposed by FROESCHNER (1960a) and recently accepted also by LINNAVUORI (1993), because at this moment it seems to me more objective than that of DOLLING (1981). Nevertheless, even if I decide to accept the latter classification, only two species should be added to this revision (*Carrabas maurus* Dist. and *Thyreocoris pakistanensis* Ahm. & Moiz. - the only Oriental representatives of the *Thyreocoridae*), because *Thaumastellidae* (-inae) and *Corimelaeninae* (-idae) have no representatives in the studied area. Regarding the *Parastrachiidae* (-inae) of which systematic position is still unclear, its one known genus *Parastrachia* Dist. and its two species were recently revised by SCHAEFER et al. (1991).

## CHARACTERS OF SYSTEMATIC IMPORTANCE

It has not been my intention to provide a complete comparative study on the external morphology in the *Cydnidae*, but rather to pay attention to some characters which can be useful in the identification of taxa.

### 1. Head

The head shows several characters for use in generic and specific definition. The number of antennal segments may be four (as in *Stibaropus* sg. *Schiodtella*, *Geopeltus* or *Adrisa*) or five (as in remaining genera), sometimes with the second segment very short (as in *Chilocoris* or *Parachilocoris*). In some cases this character is very useful in separating genera, because all species belonging to one genus have the same number of antennal segments. Conversely, the length of antennal segments appears to have only a specific value. The rostrum (4-segmented) varies in length and sometimes it can help in separating species. The ocular index (distance between eyes / width of the eye), the interocellar index (distance between ocelli / distance between ocellus and eye), and sometimes the ocellar index (distance between ocelli / width of ocellus) are also very useful in determination of species. The length of paraclypei in a relation to clypeus is a character also of specific value, but the general shape of a head may be

sometimes useful in separating subgenera (as in *Scoparipes*).

Nevertheless, the most important character of both, generic and specific value, is a head vestiture. This vestiture is of two types - primary and secondary. The primary type of setae appears to be constant and a basic feature for almost all species, except for those in the subfamily *Sehirinae*, which have no setae. There are usually three primary setae present (see fig. 242), or fewer as in *Garsauriinae* and *Cephaloctenus* (two). The secondary type of vestiture (see fig. 242) shows great generic and specific variability. The type of setae arising from the setigerous punctures indicates the relationships between groups of species within genera and is very useful for their separation. FROESCHNER (1960a) and LINNAVUORI (1993) recognized only two types of setae - "hairs" and "pegs" (FROESCHNER), and "bristles" and "spines" (LINNAVUORI).

I have realized during my studies, that at least three types should be distinguished, as follows: hair-like setae (long, hairlike, slender over the entire length - as for instance in *Cydnus*, *Peltoxys*, *Aethoscytus*, *Lactistes*, *Macroscytus*, *Geotomus*, *Fromundus*), peg-like setae (shorter and stouter than preceding, sharp, basally distinctly stouter than apically - as for instance in *Cephaloctenus*, *Stibaropus*, *Pseudostibaropus*, *Aethus*, *Byrsinus*, *Pseudoscoparipes*, *Scoparipes*), and true pegs (shortest, always blunt, stout over the entire length - as for instance in *Chilocoris*). The first type refers to FROESCHNER's "hairs" and LINNAVUORI's "bristles", the remaining two to "pegs" or "spines" respectively.

The number of setigerous punctures in a submarginal row on the head is a very good character for separating species (or group of species) within one genus. Sometimes it is difficult to interpret the type of vestiture and number of setae, because they may be torn out or broken off near the base. But even when hair-like setae are broken off, their remaining parts never resemble neither peg-like setae nor true pegs (they are distinctly thinner).

## 2. Pronotum

The pronotum also offers several features of both, specific and generic values. The arrangement and number of setae arising from a lateral, submarginal row of setigerous punctures furnish good specific features. The pronotum may be divided into two lobes - anterior and posterior - by a more or less distinct transverse impression. This feature is useful in separating species (for instance in *Macroscytus*) or even subgenera (as in *Chilocoris*). Sometimes the posterior lobe shows distinct nodular prominences, or umbones, which cover (when looking from upperside) the posterolateral margins of pronotum. This character occurs only in a small group of closely allied species and it should be accorded more than only a specific importance. The sculpture of the pronotal disc differs from species to species, and can sometimes help to distinguish them.

## 3. Scutellum

In general the scutellum of Oriental burrower bugs is of a pentatomoid shape. Sometimes it may be short, broader than long (*Garsauriinae*, *Cydninae*: *Cydnini*), longer than broad (*Sehirinae*: *Sehirini*, *Scaptocorinae*, *Cydninae*: *Geotomini*), or enlarged and broad (*Sehirinae*: *Amaurocorini*). The shape of scutellar apex is not so constant within the family and varies distinctly sometimes even within species of one genus. But as a rule the general shape of scutellum is the same for all species within the genus.

## 4. Hemelytron

The hemelytron consists of the corial area (=corium) and membrane. The corium is usually divided into three parts - clavus (next to the scutellum),



mesocorium (between the clavus and the radial vein), and exocorium (between the radial vein and the costa). In *Cephaloctenus* the corial area forms one part, and is undivided into clavus, meso- and exocorium. The puncturation of the corial area and a variable number of setigerous punctures on the costa provide very useful specific characters. The membrane is of different size even within the same species but in some genera (*Cydnus*, *Nishadana*, *Peltoxys*) it is continued proximally in a V-shaped notch to meet the apex of the medial fracture.

### 5. Posterior wing

The venation of the posterior wing was described by FROESCHNER (1960a), who regarded it as "yielded some valuable features for defining subfamilies". He (op. cit.) also constructed on this basis one of his keys to the five subfamilies of *Cydnidae* and wrote: "The results of the present study of venational features [...] permit forming the [...] tabulation, which agrees with the results obtained above from the trichobothria". Unfortunately, FROESCHNER (op. cit.) did not examine the genera *Amaurocoris* and *Linospa* (which were extralimital to the area of his study). In the case of these two genera the wing venation stays in contrary to the arrangement of trichobothria - the first is of the *Cydninae*-type, while the latter is of the *Sehirinae*-type (see also LIS, 1993a). There were found also some differences between venation of different representatives of the subfamily *Sehirinae* (LINNAVUORI, 1993; LIS, unpublished).

### 6. Evaporatoria

Evaporatorium is usually present on pleurae of both, the meso- and metathorax; sometimes that on mesopleurae is reduced or absent. The extend of evaporatoria and the puncturation of the areas around them are sometimes good specific characters. The metapleuron bears the orifice (osteolar opening) of the metathoracic scent-gland; the orifice occurs in a cuticular modification, called the peritreme. As defined by FROESCHNER (1960a) "the peritreme consists of a pair of close-set transverse ridges which may or may not be in contact along their summits". Both, the shape of the peritreme and its apical modification are the most important characters to separate genera within *Cydnidae*.

### 7. Abdomen

The sternites also furnish some important characters for use in separating species and subfamilies, as well. The sculpture of segments and the presence of patches of punctures posteriorly or anteriorly to spiracles are sometimes very useful in separating closely allied species within one genus. The arrangement of trichobothria on sternites III to VII is one of the most important characters for recognizing subfamilies within *Cydnidae*.

### 8. Legs

The legs provide many characters in the shape of coxae, femora and tibiae, the number and arrangement of the spines, and the presence or absence of tarsi. The most useful are all modifications of the tibiae, especially of anterior and posterior legs; the modifications of the anterior tibiae help in some cases define genera; these of the posterior tibiae are useful mostly in defining some subfamilies, and sometimes genera, as well.

### 9. Male genitalia

A detailed study on the male genitalia of numerous representatives of *Cydnidae* was presented by E. WAGNER (1963). In the present revision I confirm his

suggestion that genital structures of *Cydnidae* may be divided into several types at the generic level. The shape of both, parameres and aedeagus, is a very good character which proves close relationships between species within one genus and also between allied genera.

### CONCEPT OF GENERA

All previous classifications of *Cydnidae* at the generic level were based mainly on the investigator's intuition. Genera were described basing on morphological features usually of low taxonomical value. As it was already noticed by FROESCHNER (1960a) in his revision of New World *Cydnidae* "the genera were considered from one of two extremes - any unusual feature gave an opportunity for the investigator to erect a new genus each time (it resulted in too many monotypic genera)", or from the other extreme, "the limits of previously known genera were expanded to take in new species (it resulted in a few "catch-all" genera)".

UHLER (1877) was the first who used the modification of the osteole and its peritreme in studies of New World *Cydnidae*, but FROESCHNER (1960a) was the first who recognized this character to be one of the fundamental characters separating genera.

In the present revision the genera are defined as groups of species which, most importantly, share the same type of the peritreme and its apical modification supported by the same type of a head vestiture, genital structures and modifications of the certain parts of the body (head, pronotum, corium, legs). As a result, established genera are not only groups of allied species, but also have zoogeographical and phylogenetical significance (Lis, in prep.).

### BIOLOGICAL DATA

Information on the biology of representatives of the family *Cydnidae* is still rather fragmentary and mostly scattered in different papers. Biological information on New World and African species was presented by FROESCHNER (1960a) and LINNAVUORI (1993) respectively; relationships between *Cydnidae* and different plants were summarized by SCHAEFER (1988).

One can conclude from all the available facts the *Cydnidae* may be divided into several biological groups. In the group of species allied to *Sehirus* (*Sehirini*) both, nymphs and adults feed on above-ground parts of plants. *Garsauriinae* are suggested to live and feed under the bark of trees (TOMOKUNI, 1982; SCHAEFER, 1988; LINNAVUORI, 1993); one wonders if they are mycetophagous or carnivorous as TOMOKUNI (1982) suggested. Some species of *Amnestinae* are associated with ant nests (FROESCHNER, 1975; SCHAEFER, 1988); some *Cydninae* (for instance representatives of the genus *Adrisa* and *Chilocoris*) feed on seeds of *Acacia* and *Ficus*, respectively (CARAYON, 1974; BERTINI, 1978; FAITHFULL, 1987; SCHAEFER, 1988; PLUOT-SIGWALT, pers. inf.); some other species (especially these of the genus *Chilocoris* and *Fromundus*) were observed to be cannibalistic (WEBER, 1930; PLUOT-SIGWALT, pers. inf.); some species of *Chilocoris* are cavernicolous (LINNAVUORI, 1993); the remaining species of *Cydninae* as well as of *Scaptocorinae* live in the soil or sand and feed on roots and other underground parts of plants. This specific way of life has suggested for the *Cydnidae* the popular name of "burrower bugs".

In this paper previously known and new biological data are treated under each species separately.

### MATERIAL AND METHODS

The study was based on the examination of over 6500 specimens, belonging to

the following institutions and individuals (abbreviations are listed in an alphabetical order):

AMNH - American Museum of Natural History, New York, USA;  
 BMNH - the Natural History Museum, London, England;  
 CMNH - the Carnegie Museum of Natural History, Pittsburgh, USA;  
 CWS - University of Connecticut, Carl W. SCHAEFER collection, Storrs, USA;  
 DBNU - Department of Biology, Nankai University, Tianjin, P.R. China;  
 DEI - Deutsches Entomologisches Institut, Eberswalde, Germany;  
 EHC - Ernst HEISS collection, Innsbruck, Austria;  
 HEC - Hope Entomological Collections, Oxford University, England;  
 NHNM - Hungarian Natural History Museum, Budapest, Hungary;  
 IRSNB - Institut Royal des Sciences Naturelles de Belgique, Brussels, Belgium;  
 IZPAS - Institute of Zoology PAS, Warsaw, Poland;  
 JAL - the author's collection;  
 JMC - Jochen MARTENS collection, Universität Mainz, Germany;  
 LHC - Ludwik HOBERLANDT collection, Prague, Czech Republic;  
 MCSN - Museo Civico di Storia Naturale, Genova, Italy;  
 MNHN - Muséum National d'Histoire Naturelle, Paris, France;  
 MNHU - Museum für Naturkunde, Humboldt-Universität, Berlin, Germany;  
 NHMW - Naturhistorisches Museum Wien, Vienna, Austria;  
 NHMUK - Natural History Museum, University of Karachi, Pakistan;  
 NSMT - National Science Museum, Tokyo, Japan;  
 RNH - Nationaal Natuurhistorisch Museum [the former Rijksmuseum van Natuurlijke Historie], Leiden, the Netherlands;  
 SMNH - Swedish Museum of Natural History, Stockholm, Sweden;  
 SMNS - Staatliches Museum für Naturkunde, Stuttgart, Germany;  
 ZIP - Zoological Institute, St. Petersburg, Russia;  
 ZIZM - Zoologisches Institut und Zoologisches Museum, Universität Hamburg, Germany;  
 ZMA - Zoologisch Museum, Universiteit van Amsterdam, the Netherlands;  
 ZMC - Zoologisk Museum, Copenhagen, Danmark;  
 ZMHU - Zoological Museum, Helsinki University, Finland.

Additionally 175 syntype specimens of 98 species have been examined during studies. Lectotypes have been designated from each series of syntypes. If the syntype series consisted of only one specimen it was also designated as the lectotype. If the original description or other sources explicitly proved that a new species was based on a single specimen, this specimen was labelled as the holotype, according to the Art. No. 73a (holotype by original designation) and Art. No. 73 a II (holotype by monotypy) of the International Code of Zoological Nomenclature.

For dissection of male genitalia the entire genital segment was put for one minute into boiling water and then dissected under a standard optical equipment.

Parameres, pygophore and aedeagus were separated, placed in the glycerine and figured. I did not inflate aedeagi, as was proposed in the procedure described by AHMAD (1986), because as I was convinced myself, the shape of uninflated aedeagus is more useful for determination of species than the shape of the inflated one.

All measurements are given in millimeters and were taken in a standard manner (see FROESCHNER, 1960a: 349); the total length of the insect is that from the head apex to the apex of the membrane.

## STUDY AREA

The study area includes the following countries (from west to east): Pakistan, India, Nepal, Bhutan, Bangladesh, China (excluding its Northern Provinces), Hong

Kong, Burma, Thailand, Laos, Vietnam, Cambodia, Philippines, Malaysia, and Indonesia (excluding its eastern islands and a part of New Guinea).

Locality data are given within this political subdivisions. Numerous place names have changed in the last few decades and in some cases old original names are used (especially when they have appeared on the locality labels of specimens examined).

#### ACKNOWLEDGMENTS

I would like to express my sincere thanks to the following persons for the loan of material for the study: Mr. S.O. FISCHL (AMNH), Mr. J.H. MARTIN, Mrs J. PALMER and Mrs J. MARGERISON KNIGHT (BMNH), Dr. J.E. RAWLINS (CMNH), Prof. Dr. L.Y. ZHENG (DBNU), Dr. E. TAEGGER (DEI), Dr. I. LANSBURY (HEC), Dr. T. VÁSÁRHELYI (HNHM), Dr. J. VAN STALLE and Dr. P. GROOTAERT (IRSNB), Dr. E. KIERYCH (IZPAS), Dr. V. RAINERI (MCSN), Prof. Dr. J. MARTENS (JMC), Prof. Dr. C.W. SCHAEFER (CWS), Dr. L. HOBERLANDT (LHC), Dipl. ing. E. HEISS (EHC), Dr. D. PLUOT-SIGWALT (MNHN), Dr. J. DECKERT (MNHU), Dr. U. ASPÖCK and Dr. H. ZETTEL (NhMW), Prof. Dr. I. AHMAD (NHMUK), Dr. M. TOMOKUNI (NSMT), Dr. J. VAN TOL (RNH), Dr. P. LINDSKOG (SMNH), Dr. W. SCHAWALLER (SMNS), Dr. I.M. KERZHNER (ZIP), Dr. Yu.A. POPOV (Moscow), Dr. J.P. DUFFELS (ZMA), Prof. Dr. N. MØLLER ANDERSEN (ZMC) and Dr. L. HULDÉN (ZMHU).

I am also very grateful to Prof. Dr. H. STRÜMPER and Dr. H. DASTYCH (ZIZM), Dr. U. ASPÖCK and Dr. H. ZETTEL (NhMW), Mr. M. WEBB, Mr. J.H. MARTIN, Mrs J. MARGERISON KNIGHT (BMNH), Dr. D. PLUOT-SIGWALT (MNHN), and Dr. J.P. DUFFELS (ZMA) for their kind help during my visits at the respective institutions abroad; my special gratitude is due to Dr. J.P. DUFFELS and his wife for great hospitality during my stay in Amsterdam.

I owe my thanks also to Dr. D. PLUOT-SIGWALT (MNHN) for her unpublished data on the biology of some species of *Cydnidae*, to Mrs J. DAN SITU (Zhong Shan, China) for the translation of Chinese descriptions of some species into English, to Mr. M. WEBB (BMNH) for correcting the English text of the general part of this paper, and to Mr. G. KLYS for the dorsal view illustrations of numerous species. I am also grateful for all the information received from Dr. L.Y. CHOU (Taiwan Agricultural Research Institute, Taichung, China), Dr. I.M. KERZHNER (ZIP), and Dr. B. AUKEMA (Plant Protection Service, Wageningen, the Netherlands).

Special thanks are due to the Alexander von Humboldt Foundation (Bonn, Germany) for a stipend, which made it possible for me to carry out the necessary comparative studies in various museums abroad.

## SYSTEMATIC PART

### Family CYDNIDAE BILLBERG

*Cydnides* BILLBERG, 1820: 70.

As I have already mentioned, at the present state of our knowledge it is impossible to decide which taxa should be actually included in the *Cydnidae*, and therefore it is also impossible to give a certain diagnosis of the family. Nevertheless, at least some distinctive characters should be given (according to the classification of family I have accepted here) to facilitate a distinction of species of *Cydnidae* from representatives of other pentatomoid families occurring in the Oriental Region. The most useful characters (in a technical sense) are, as follows: body usually dark coloured (different shades of black and brown, only occasionally yellowish brown); tarsi 3-segmented; coxal combs present; tibiae with stout bristles and spines; scutellum not modified into a large shield largely concealing the abdomen and the hemelytra.

TYPE OF FAMILY. - Genus *Cydnus* FABRICIUS, 1803.

## KEY TO THE SUBFAMILIES OF CYDNIDAE

1. Trichobothria of sternites III-VII posterior to spiracles (figs. 1-2); tarsi with the 2nd segment thinner than 1st and 3rd ..... 2.
- At least the sternite III with the inner trichobothrium mesad or anterior to the spiracle (figs. 3-4); tarsi with all segments slender and equal in diameter ..... 3.
2. Trichobothria arranged in longitudinal pairs (fig. 1); scutellum short, broader than long; 2nd antennal segment less than half as long as the 1st; body flattened ..... **GARSAURIINAE** (p. 15)
- Trichobothria arranged in more or less transverse pairs (fig. 2); scutellum longer than broad; 2nd antennal segment as long as or longer than the 1st; body at least slightly convex ..... **SEHIRINAE** (p. 40)
3. Each sternite (III-VII) with the inner trichobothrium distinctly anterior to the spiracle, always reaching or almost reaching the anterior margin of sternite (fig. 3); posterior tibiae remarkably swollen ..... **SCAPTOCORINAE** (p. 19)
- At best only the sternite III with the inner trichobothrium more anterior in position than the spiracle (fig. 4); posterior tibiae not swollen ..... **CYDNINAE** (p. 49)

**Subfamily GARSAURIINAE FROESCHNER**

*Garsauriinae* FROESCHNER, 1960a: 364.

**DIAGNOSIS.** - The subfamily is best diagnosed by the set of following characters: the body flattened; the scutellum short, broader than long; the 2nd antennal segment less than a half as long as the 1st; the tarsal II distinctly thinner than either I or III; the trichobothria arranged in longitudinal pairs posterior to the spiracles (fig. 1).

**DESCRIPTION.** - Body flattened, lateral margins almost parallel; dorsal surface coarsely punctured. Head broader than long, trapezoid or subtriangular; each paraclypeus dorsally with two primary setigerous punctures; eyes large and protruding; antennae 5-segmented, 2nd segment very short; rostrum short, reaching at best a base of mesosternum.

Pronotum distinctly broader than long; anterior and lateral margins carinated, disc flattish with transverse depression on either side behind calli.

Scutellum short, triangular, broader than long, apex almost rounded.

Hemelytron distinctly divided into clavus, meso- and exocorium; corium large, membrane large.

Anterior and posterior convexity of propleuron distinctly developed; evaporative areas on both meso- and metapleuron small, peritreme well differentiated, opening visible in ventral view.

Sternites III-VII each with two trichobothria arranged in longitudinal pairs posterior to the spiracle.

Legs not modified; anterior, middle and posterior tibia slender with tarsus inserted at its apex; 2nd tarsal segment thinner than either I or III.

**TYPE OF SUBFAMILY.** - Genus *Garsauria* WALKER, 1868.

**DISTRIBUTION.** - Representatives of the subfamily are known to occur in the Palearctica (*Garsauria* WALKER and *Garsauriella* LINNAVUORI).

## Genus *Garsauria* WALKER

*Garsauria* WALKER, 1868: 536.

*Microrhynchus* SIGNORET, 1883b: LXIII, syn. by DISTANT, 1899a: 224.

**DIAGNOSIS.** - It is the only Oriental genus of the subfamily.

**DESCRIPTION.** - Body large, 8.1-11.3 mm in length, black or sometimes blackish brown, parallel-sided.

Head short and broad, paraclypei longer than clypeus and joined in front of it; eyes large, protruding, ocelli present; antennae 5-segmented, with 2nd segment minute; rostrum 4-segmented, short, reaching at best slightly behind fore coxae; bucculae small, covering only a basal part of rostrum.

Pronotal disc with two distinct depression; umbones developed. Scutellum small, base more convex than the apex. Membrane narrower than abdomen.

Genital segment of male heavily sclerified; penis with theca not sclerified and only slightly pigmented.

**TYPE OF GENUS.** - *Garsauria aradoides* WALKER, 1868, by monotypy; of *Microrhynchus*, *Microrhynchus beccarii* SIGNORET, 1883, by monotypy.

### Key to species of *Garsauria*

1. Female ..... 2.
- Male ..... 3.
2. Anterior part of pronotal disc without median oblong impression; 3rd antennal segment 6.7-8.1 times longer than the 2nd ..... *aradoides* (p. 16)
- Anterior part of pronotal disc with distinct median oblong impression; 3rd antennal segment 9.0-11.1 times longer than the 2nd ..... *laosana* (p. 17)
3. Genital segment simple, ventrally without process (fig. 8); paramere as in fig. 10 ..... *aradoides* (p. 16)
- Genital segment ventrally with a long, broad and tongue-like processus (fig. 7); paramere as in fig. 9 ..... *laosana* (p. 17)

### *Garsauria aradoides* Walker

(figs. 6, 8, 10, 12)

*Garsauria aradoides* WALKER, 1868: 536; LETHIERRY & SEVERIN, 1893: 81; DISTANT, 1902: 103; SCHOUTEDEN, 1905: 49; LINNAVUORI, 1977: 35; LIS, 1992b: 147.

*Microrhynchus Beccarii* SIGNORET, 1883b: LXIII, 1884: 525, syn. by DISTANT, 1899a: 224.

*Microrhynchus* [sic!] *Beccarii*: LETHIERRY & SEVERIN, 1893: 76.

Misidentifications: HSIAO et al., 1977: 49; TOMOKUNI, 1982: 414, 1989: 186; TAKAKURA, 1985: 518; SCHAEFER, 1988: 30.

**DIAGNOSIS.** - The species is best diagnosed by the characters given in the key.

**DESCRIPTION.** - Head densely punctured; eyes blackish brown, ocular index about 1.5-1.9; ocelli brown, yellowish brown or reddish brown, interocellar index 2.6-3.4; antennae brown or blackish brown, 2nd segment minute, about 6.7-8.1 times (in female) or 6.7-8.5 times (in male) shorter than the 3rd; rostrum brown, short, reaching or slightly surpassing fore coxae.



Pronotum densely punctured, except lateral margins; anterior part of a disc with two small median protuberances, and without oblong impression between them.

Scutellum punctured, except for oblique dull spot near each basal angle; distinct lateral incisions before the apex well visible.

Corium distinctly punctured; clavus with two rows of punctures, mesocorium densely and almost evenly punctured, exocorium with weaker puncturation; membrane brown, either shorter or longer than abdomen.

Paramere as in fig. 10; male genital capsule simple, ventrally without long tongue-like process (fig. 8); genital segment of female dorsally straight or only slightly insinuated in the middle (fig. 6)

Measurements (males and females respectively): body length 8.60-11.30, 8.10-10.00; body width 4.45-5.50, 4.56-5.45; head length 0.91-1.33, 0.96-1.39; head width 1.83-2.20, 1.82-2.29; pronotum length 2.19-2.63, 2.00-2.60; pronotum width 4.45-5.40, 4.30-5.30; scutellum length 1.76-2.32, 1.73-2.10; scutellum width 2.80-3.37, 2.58-3.19; antennal segments 0.38-0.42 : 0.11-0.17 : 0.83-1.16 : 0.80-1.06 : 0.96-1.09, 0.36-0.45 : 0.11-0.17 : 0.75-1.12 : 0.70-1.11 : 0.88-0.99.

#### TYPE MATERIAL EXAMINED

Lectotype female of *Garsauria aradoides* WALKER (designated by LIS, 1992b: 147): [INDONESIA]: Bac. 45; SAUNDERS 65.13; Type; 1. *Garsauria aradoides* WALKER; Brit. Mus. Type No. Hem. 354; Lectotype, det. J.A. LIS (BMNH).

Paralectotype female of *Garsauria aradoides* WALKER: [INDONESIA]: Paratype; Kai; SAUNDERS 65.13; *Garsauria aradoides* WALKER's catal. (BMNH).

Lectotype female of *Microrhynchus beccarii* SIGNORET (designated by LIS, 1992b: 147): [INDONESIA]: Isole Key, 1873, O. BECCARI; Typus; *Microrhynchus Beccarii* n.sp., Bull. Soc. Ent. 1882; *Beccarii* Sign.; Museo Civico di Genova; Lectotype, det. J.A. LIS (MCSN).

#### OTHER MATERIAL EXAMINED (3 males, 2 females)

INDONESIA: NE Sumatra, Kuala Simpang, lowland forest, 1 female XII. 1953, a.l., A. SOLLAART, Museum Leiden (RNH); Java, Banjoewangi, 1 male 1911, MAC GILLAVRY, coll. Dr. D. MAC GILLAVRY (ZMA).

MALAYSIA: Borneo, Sarawak, Mt. Poi. 200ft, 1 female, Dr. E. MJOBERG, Mt. Poi. Exp., Brit. Mus. 1924-333 (BMNH); N.W. Borneo, Kuching, 2 males, Capt. Jan. 20.00 by DYAK coll., Pres 1900 by R. SHELFORD, 1900, 9486 - 9487 (BMNH, JAL).

DISTRIBUTION. - Indonesia (Java, Sumatra), Malaysia (Sarawak). Known also from New Guinea, Moluccas and Solomon Islands.

BIOLOGICAL DATA. - One of the specimens was collected in a tropical lowland forest.

REMARKS. - I have examined one specimen of *G. aradoides* labelled "Rangoon, ATKINSON coll." (DISTANT, 1902; then repeated by SCHOUTEDEN, 1905, and as the record of *G. laosana* by LIS, 1991b, 1992b ); I regard it as a case of mislabelling.

### ***Garsauria laosana* LIS**

(figs. 5, 7, 9, 11, 13)

*Garsauria aradoides*, not of WALKER: HSIAO et al., 1977: 49; TOMOKUNI, 1982: 414, 1989: 186; TAKAKURA, 1985: 518; SCHAEFER, 1988: 30.

*Garsauria laosana* LIS, 1991b: 166, 1992b: 148.

DIAGNOSIS. - The species can be easily distinguished from *G. aradoides* WALK. by the characters given in the key, namely the shape of the anterior part of pronotal disc, the length ratio of the 3rd to 2nd antennal segment, the shape of paramere, and male genital capsule. Besides, *G. laosana* is stouter than *G. aradoides* (body length/width: 1.70-1.82 and 1.78-2.05, respectively - see figs. 11 & 12).

DESCRIPTION. - Head densely punctured; eyes blackish brown, ocular index about 1.6-2.1; ocelli brown or reddish brown, interocellar index about 2.3-2.8; antennae brown or blackish brown, 2nd segment about 9.0-11.1 times (in female) or 7.0-10.5 times (in male) shorter than the 3rd; rostrum brown, short, reaching or slightly surpassing fore coxae.

Pronotum densely punctured, anterior part of a disc with distinct oblong median impression.

Scutellum densely punctured, except for oblique dull spot near each basal angle; apex more depressed and basal half more elevated than in *G. aradoides*.

Corium with a pattern of puncturation as in *G. aradoides*; membrane brown, not reaching the tip of abdomen.

Paramere as in fig. 9; male genital capsule ventrally with long tongue-like process (fig. 7); genital segment of female dorsally with distinct median insinuation (fig. 5).

Measurements (males and females respectively): body length 9.43-11.10, 9.52-11.65; body width 5.35-6.10, 5.60-6.10; head length 1.26-1.51, 1.20-1.51; head width 2.10-2.32, 2.14-2.39; pronotum length 2.55-2.90, 2.70-2.85; pronotum width 5.30-6.05, 5.50-6.10; scutellum length 1.95-2.44, 2.19-2.55; scutellum width 3.44-4.00, 3.46-3.82; antennal segments 0.40-0.43 : 0.12-0.18 : 1.21-1.47 : 1.02-1.27 : 1.10-1.30, 0.35-0.43 : 0.11-0.14 : 1.22-1.34 : 1.06-1.12 : 1.06-1.10.

#### TYPE MATERIAL EXAMINED

Holotype female of *Garsauria laosana* LIS: [LAOS]: Laos, *Garsauria laosana* LIS, det. J.A. LIS, Holotype (JAL).

Paratype female: [LAOS]: Laos, *Garsauria laosana* LIS, det. J.A. LIS, Paratype (JAL).

#### OTHER MATERIAL EXAMINED (19 males, 14 females)

SOUTH CHINA: China, Yunnan, 5 females 4 males, det. as *Garsauria aradoides* WALK. (HNHM, JAL).

LAOS: Laos, 1 male 1 female, 1920-280, R.V. de SALVAZA, Indo China, R.V. de SALVAZA 1918-1 (BMNH).

VIETNAM: Hon-Gai, Vietnam, 1 male 10-20/I 962, KABAKOV (JAL); Tan Dao, 200m, 1 male, on light (JAL), 1 male 16/XI 961 (ZIP), 1 male, O. KABAKOV (ZIP); Tonkin, Than Hoi, 1 female 31 III 1918, JEANVOINE, det. as *Garsauria*, KRITSHENKO det. (ZIP); Tonkin, Hoa-Binh (J. DE COOMAN), R. OBERTHUR 1919, 2 females 1 male, Muséum Paris, *Heurnius* sp.?, We-I YANG det. (MNHN, JAL); Tonkin, Hoabinh, R.V. de SALVAZA, det. as *Garsauria aradoides* WALK., 6 males 2 females Aug. 1918 (BMNH, JAL), 1 male Aug. 1918 (RNH), 1 male Jan. 1917 (RNH); Tonkin Centr., Env. de Tuyen-Quan, 1 male 2 females 1 larva, Muséum Paris, A. WEISS 1901, det. as *Heurnius* sp.?, We-I YANG det. (MNHN, JAL); Tonkin, Baolun, 1 female 1908, Donateur: Comm. FOUQUET, Sanary, 1934, Brit. Mus. 1934-603 (BMNH).

DISTRIBUTION. - South China (Hainan, Yunnan), Laos, Vietnam, Japan.

BIOLOGICAL DATA. - Specimens of this species were found below the loose bark of a large fallen tree (TOMOKUNI, 1982; SCHAEFER, 1988).

REMARKS. - When I described the species (LIS, 1991b) I regarded all previous records of *G. aradoides* from the Oriental Region as pertained to *G. laosana*. It is not quite true, as I have realized during further studies; the previous record of *Garsauria* from Borneo (LIS, 1991b, 1992b - repeated after DISTANT, 1902) pertained in fact to *G. aradoides*.

The specimen (male) labelled "Rangoon, ATKINSON coll." (housed in BMNH), determined by DISTANT (1902) as *G. aradoides*, actually represented this species; nevertheless, the locality lies far from the main area of the species distribution, and at this moment I regard it as a case of mislabelling. Thus, neither *G. laosana* nor *G. aradoides* occur in Burma.



## Subfamily *SCAPTOCORINAE* FROESCHNER

*Scaptocorinae* FROESCHNER, 1960a: 365.

**DIAGNOSIS.** - The posterior tibiae remarkably swollen, and the sternites III-VII each bearing one trichobothrium more anterior in position than the spiracle and one posterior to it separate this subfamily from all others in the *Cydniidae*.

**DESCRIPTION.** - Body strongly convex, 4.1-14.0 mm in length.

Head subquadrate or semicircular, usually with more or less distinct lateral crenulations bearing peg-like setae, sometimes stout and very strong; eyes small to large, usually round and protruding beyond lateral margins of head (narrow and not surpassing head margins in *Cephaloctenus*); antennae four or five segmented.

Pronotum broader than long, narrowed anteriorly, all angles broadly rounded; each lateral margin with a row of submarginal setigerous punctures.

Scutellum longer than broad, apex broadly rounded.

Corium divided into clavus, meso- and exocorium (except *Cephaloctenus* in which this division is absent); membrane distinctly developed, usually surpassing the tip of abdomen, though sometimes (*Cephaloctenus*) it may be very short; costal margins with numerous setigerous punctures.

Posterior convexity of propleuron not developed; evaporative area on mesopleuron small or absent, this on metapleuron large; peritreme distinctly differentiated; mesosternum with median convexity bearing numerous long hairs.

Sternites III-VII with numerous both hairs and hair-like setae, and each with two trichobothria (fig. 3) - a small one posterior to spiracle and a large one antero-ventral to spiracle.

Legs strongly modified; anterior tibia falcate or cultrate, tarsus inserted in its mid-length (except *Cephaloctenus* in which it is bluntly rounded with tarsus inserted either apically or subapically); middle tibia ventrally compressed, dorsally swollen and with numerous stout spines, tarsus inserted subapically; posterior femur and posterior tibia remarkably swollen, the latter usually club-shaped, armed in numerous stout spines, apex obliquely truncated; posterior tarsus either arising from the subapical area or absent (*Pseudostibaropus*).

**TYPE OF SUBFAMILY.** - Genus *Scaptocoris* PERTY, 1830.

**DISTRIBUTION.** - Representatives of the subfamily are distributed in the Neotropical Region (*Atarsocoris* and *Scaptocoris*), southern parts of the Palearctic Region, the Oriental Region and South Africa (*Cephaloctenus*, *Pseudostibaropus* and *Stibaropus*).

**REMARKS.** - The subfamily *Scaptocorinae* was erected by FROESCHNER (1960a) for two genera - *Scaptocoris* PERTY (New World) and *Stibaropus* DALLAS (Old World) on the basis of characteristic arrangement of trichobothria ("sternites III to VIII with one trichobothrium more anterior in position than spiracle and one [...] posterior to it"), wing venation ("cross vein r-m very strongly oblique so that M1+2 leaves radial cell basad of fracture in Sc+R") and strongly modified anterior tibiae ("anterior tibiae strongly cultrate, much produced beyond tarsal insertion so that tarsus appears to arise at middle of tibial length").

E. WAGNER (1963) on the basis of genital structures of *Cephaloctenus scarabaeoides* (FABRICIUS) pointed out the close relationship between two genera - *Cephaloctenus* DUF. and *Stibaropus* DALL., and placed both within the tribe

*Scaptocorini* (the latter was downgraded by him from a separate subfamily to the tribe within the subfamily *Cydninae*).

The arrangement of trichobothria, shape of legs (esp. posterior tibiae), and a wing venation confirm that these two genera are closely related, and should be grouped together.

Unfortunately *Cephaloctenus* Duf. has the anterior tibiae not modified as the other genera of *Scaptocorinae* - the tarsus arises at or almost at the apex of tibiae. From the other side, middle and posterior tibiae of *Cephaloctenus* are swollen similarly as in the other *Scaptocorinae* genera. Additionally, the arrangement of trichobothria and wing venation support grouping of these five genera (*Atarsocoris*, *Stibaropus*, *Scaptocoris*, *Pseudostibaropus* and *Cephaloctenus*) together.

As concerns the rank of this group of genera (a tribe within the subfamily *Cydninae* or a separate subfamily) I have accepted the status given to it by FROESCHNER (1960a) and almost all subsequent authors (HSIAO et al., 1977; DOLLING, 1981; MOIZUDDIN & AHMAD, 1990), because giving this group the rank of a tribe within *Cydninae* makes the latter undefined. In all keys to the subfamilies of *Cydnidae* (FROESCHNER, 1960a; DOLLING, 1981; MOIZUDDIN & AHMAD, 1990) the *Scaptocorinae* was recognized within the family by having anterior tibia falcate or cultrate, with tarsus inserted in its mid-length.

As one can now realize (see also remarks to *Lactistes* SCHI.) it is not a good character to distinguish the *Scaptocorinae* from the other subfamilies of *Cydnidae*. Posterior tibiae remarkably swollen and the mentioned arrangement of trichobothria are the best diagnostic characters of this subfamily.

#### Key to tribes of *Scaptocorinae*

1. Anterior tibia bluntly rounded at the apex, tarsus arising either almost at or just at the tip; ocelli absent . . . . . ***Cephaloctenini*** (p. 20)
- . Anterior tibia falcate or cultrate, tarsus inserted in its mid-length; ocelli present . . . . . ***Scaptocorini*** (p. 22)

#### Tribe *Cephaloctenini* Mulsant & Rey, emendation

Céphaloctéaires Mulsant & Rey, 1866: 7.  
*Scaptocorini* [part]: E. Wagner, 1963: 113.

DIAGNOSTIC CHARACTERS. - Head without ocelli; antennae 5-segmented. Corium undivided into clavus, meso- and exocorium. Membrane short, reduced. Anterior tibia bluntly rounded at the apex, tarsus arising at or almost at its tip. Evaporatorium on metapleuron with short peritreme and large lobe-like polished area.

TYPE OF TRIBE. - Genus *Cephaloctenus* Dufour, 1834.

DISTRIBUTION. - Restricted to the Old World regions where its representatives have been reported from the southern parts of the Palearctics, India, Timor, and South Africa (Cape of Good Hope).

## Genus *Cephaloctenus* DUFOUR

*Cephaloctenus* DUFOUR, 1834: 342

*Cephaloctenus*: SCHIØDTE, 1843: 330 [emend.]; 1847: 449, 450, 451, 453, 456.

**DIAGNOSIS.** - At present it is the only genus of the tribe known from the Oriental Region.

**DESCRIPTION.** - Head broader than long, clypeus distinctly shorter than paraclypei; each paraclypeus with two primary setigerous punctures and a submarginal row of numerous secondary setigerous punctures bearing peg-like and hair-like setae; eyes small and narrow, with at least two spines on the outer margin; ocelli absent; antennae 5-segmented.

Pronotum twice or more times broader than long, umbones not swollen; anterolateral, lateral and posterolateral parts with numerous both short and long setae.

Scutellum broad, apex broadly rounded.

Corium undivided into clavus, meso- and exocorium; lateral margins with numerous both short and long setae over the entire length; membrane short, reduced and not reaching the tip of abdomen.

Sternites laterally and apically with numerous long setae.

Anterior tibia bluntly rounded at the apex, tarsus arising at or almost at its tip; middle and posterior tibia swollen and somewhat curved; dorsal surface of tibia with numerous spines and setae, ventral surface flattened, without spines.

Evaporatorium on metapleuron with short peritreme and lobe like polished area.

**TYPE OF GENUS.** - *Cydnus scarabaeoides* FABRICIUS, 1803 (= *Cephaloctenus histeroides* DUFOUR, 1834), by automatic fixation.

### *Cephaloctenus melolonthoides* SCHIØDTE

(figs. 14-19)

*Cephaloctenus melolonthoides* SCHIØDTE, 1843: 333.

*Cephaloctenus* (!) *melolonthoides*: STÅL, 1876: 21; SIGNORET, 1881d: 40; ATKINSON, 1887: 37; LETHIERRY & SEVERIN, 1893: 60; DISTANT, 1902: 83.

**DIAGNOSIS.** - This is the only Oriental representative of the genus.

**DESCRIPTION.** - Head (fig. 14) blackish brown, short, bilobate, sparsely punctured; clypeus shorter than paraclypei, subapically with two long setae; paraclypei joined in front of clypeus, each with a submarginal row of 17-20 setigerous punctures bearing 13-15 peg-like and 4-5 hair-like setae; eyes narrow and small, reddish brown, margins with two spines, ocular index 8.4-8.6; antennae brown or light brown; rostrum brown, reaching middle coxae.

Pronotum anteriorly blackish brown, posteriorly dark brown; disc (except calli) with numerous scattered punctures; anterolateral, lateral and posterolateral parts with several rows of numerous setigerous punctures.

Scutellum broad, of the same colour as the posterior part of pronotum, entirely evenly punctured with exception of small anterolateral smooth spots; apex broadly rounded.

Corium of the same colour as scutellum, shorter than the latter; disc evenly punctured, undivided into clavus, meso- and exocorium; each lateral margin with

numerous both long and short setae: membrane small, reduced, yellowish brown with the basal part of the same colour as corium.

Propleuron polished, impunctate; evaporative area on mesopleuron absent, replaced with numerous hair-like setae; evaporatorium on metapleuron with a large lobe-like polished area (fig. 15).

Abdomen brownish black; each sternite posteriorly with numerous punctures bearing long yellowish hair-like setae.

Anterior tibia not specifically modified, only slightly distally dilated; tarsus light brown arising from the tip of tibia, margin with 8-9 spines; middle (fig. 16) and posterior tibiae (fig. 17) with dorsal surface distinctly swollen and armed in numerous stout spines and setae; tarsi arising at the tip of tibiae, 1st segment longest, the 2nd shortest.

Paramere as in fig. 18, penis as in fig. 19.

Measurements (male and female respectively): body length 4.17-4.29, 4.10; body width 2.93-3.02, 2.78; head length 0.73-0.74, 0.85; head width 1.17-1.18, 1.16; pronotum length 1.19-1.24, 1.02; pronotum width 2.66-2.73, 2.61; scutellum length 1.90-2.05, 2.19; scutellum width 2.19-2.24, 2.19; antennal segments 0.36-0.39 : 0.24-0.25 : 0.26-0.28 : 0.18 : 0.19, 0.28 : 0.24 : 0.26 : 0.17 : 0.18.

#### TYPE MATERIAL EXAMINED

Lectotype male of *Cephaloctenus melolonthoides* SCHIÖDTE (present designation): [INDIA]: Ind. or., Koefoed, *Melolonthoides* SCHIÖ., Origin; Type (ZMC).

Paralectotypes: 1 male: [INDIA]: Ind. or., Koefoed; Type (ZMC); 1 female: [INDIA]: Ind. or., Koefoed, Type (ZMC).

DISTRIBUTION. - India, Timor.

REMARK. - The record from Timor may represent another, yet not described species of the genus.

### Tribe *Scaptocorini* FROESCHNER

DIAGNOSTIC CHARACTERS. - Ocelli present; antennae 4- or 5-segmented; corium divided into clavus, meso- and exocorium; membrane distinctly developed; anterior tibia falcate or cultrate, with tarsus inserted at its midlength; evaporatorium on metapleuron with distinctly developed peritreme and modified apex.

TYPE OF TRIBE. - Genus *Scaptocoris* PERTY, 1830.

DISTRIBUTION. - Representatives of this tribe are known to occur in New World (*Scaptocoris* and *Atarsocoris*), and Old World regions (*Stibaropus* and *Pseudostibaropus*).

#### Key to genera of *Scaptocorini*

1. Apex of peritreme lobe-like (fig. 22); posterior tarsi absent . . . *Pseudostibaropus* (p. 23)
- . Apex of peritreme with slender hook-like tooth on the posterior margin (figs. 39, 45, 56); posterior tarsi present . . . . . *Stibaropus* (p. 24)

## Genus *Pseudostibaropus* Lis

*Pseudostibaropus* Lis, 1991f: 321.

**DIAGNOSIS.** - The genus is closely related to *Stibaropus* in a general habitus, but it can be easily distinguished from the latter by the rounded, lobe-like apex of peritreme (fig. 22), as well as the posterior tarsi absent.

**DESCRIPTION.** - Body elongated, strongly convex dorsally and ventrally.

Head a little wider than long; paraclypei with a row of submarginal peg-like setae, clypeus with two subapical peg-like setae; eyes prominent, ocelli present; antennae 5-segmented, 2nd segment minute; rostrum with 2nd segment simple, without foliaceous semicircular lobe.

Pronotum distinctly broader than long, narrowed anteriorly, all angles broadly rounded; lateral margins with a row of submarginal setigerous punctures; posterior part of disc with transverse rugae sometimes accompanied by punctures.

Scutellum longer than broad, transversely wrinkled and punctured; apex expanded, broadly rounded.

Corium distinctly divided into clavus, meso- and exocorium; membranal suture sinuate in median half; membrane hyaline, distinctly surpassing the apex of abdomen.

Apex of peritreme rounded, lobe-like, bearing no hook-like tooth (fig. 22).

Sternites with numerous long hair-like setae.

Legs short and stout, anterior tibiae falcate, prolonged beyond tarsal insertion; middle tibiae somewhat clavate, curved, ciliate; posterior femora strongly swollen, posterior tibiae stoutly club-shaped, apex obliquely truncated; anterior and middle tarsi slender, second segment shortest; posterior tarsi absent.

**TYPE OF GENUS.** - *Stibaropus testaceus* WALKER, 1867, by original designation.

### *Pseudostibaropus testaceus* (WALKER)

(figs. 20-24)

*Stibaropus testaceus* WALKER, 1867: 166; Lis, 1991b: 169.

*Stibaropus* (?) *testaceus*: ATKINSON, 1887: 42; LETHIERRY & SEVERIN, 1893: 61.

*Stibaropus flavidus* SIGNORET, 1881d: 47; ATKINSON, 1887: 41; LETHIERRY & SEVERIN, 1893: 61, syn. with *S. testaceus* by Lis, 1991b: 169.

*Stibaropus minor*, not of WALKER: DISTANT, 1899a: 218, 1901a: 100, 1902: 85; PAIVA, 1907: 17; MAXWELL-LEFROY, 1909: 305; MOIZUDDIN & AHMAD, 1990: 333.

*Pseudostibaropus testaceus*: Lis, 1991f: 323.

**DIAGNOSIS.** - It is the only known species of the genus.

**DESCRIPTION.** - Head (fig. 20) yellowish brown or brown, almost smooth; clypeus as long as or slightly shorter than paraclypei, with two subapical peg-like setae; each paraclypeus with a submarginal row of 6-11 peg-like setae; eyes prominent, brown or dark brown, ocular index 3.6-4.9 (3.6-4.7 in female, 4.2-4.9 in male); ocelli yellowish or reddish brown, interocellar index 6.4-12.0; antennae yellow or pale yellow; rostrum yellow, reaching middle coxae.

Pronotum of the same colour as head; posterior part of disc transversely wrinkled and slightly punctured, the anterior sometimes darker than the posterior; each lateral margin with a row of 18-38 submarginal setigerous punctures.

Scutellum of the same colour as the posterior lobe of pronotum, slightly transversely wrinkled and punctured (sometimes punctures are almost invisible).

Corium yellowish brown or brown, almost evenly punctured; costal margin with 7-19 setigerous punctures; membrane hyaline, brownish, extending far beyond the apex of abdomen.

Sternites yellowish brown, almost smooth, laterally with numerous long brownish hair-like setae. Legs yellowish brown, fore tibiae as in fig. 21; posterior tarsi absent; tibial spines brown.

Paramere and penis as in figs. 23 & 24, respectively.

Apex of peritreme as in fig. 22.

Measurements (male and female, respectively): body length 4.75-6.05, 6.50-7.80; body width 2.66-3.05, 3.10-3.68; head length 0.91-1.09, 1.12-1.22; head width 0.98-1.08, 1.30-1.31; pronotum length 1.48-1.78, 1.96-2.15; pronotum width 2.34-2.61, 3.17-3.51; scutellum length 1.97-2.24, 2.19-2.24; antennal segments 0.18-0.25 : 0.07-0.10 : 0.23-0.25 : 0.23-0.24 : 0.29-0.36, 0.21-0.25 : 0.07-0.11 : 0.31-0.35 : 0.29-0.35 : 0.35-0.43.

#### TYPE MATERIAL EXAMINED

Lectotype female of *Stibaropus testaceus* WALKER (designated by LIS, 1991b: 169): [INDIA]: E. Ind. 52 109; Type; 3. *Stibaropus testaceus*; Brit. Mus. Type No. Hem. 271 (BMNH).

Lectotype male of *Stibaropus flavidus* SIGNORET (designated by LIS, 1991f: 324): [INDIA]: N. Indien, Coll. Signoret; *flavidus* det SIGNORET; Typus, labelled by R.C. FROESCHNER 59; Coll. Nat.-Mus. Wien (NhMW).

#### OTHER MATERIAL EXAMINED (3 males, 12 females, 1 larva)

INDIA: Rajasthan, Bassi, Jaipur, 2 females 2 males 1 larva, 14 VIII 1965, v. K. Sahani, on Napier grass, C.I.E. Coll., No. A. 488, Pres. by Com. Inst. Ent., B.M. 1965-3 (BMNH, JAL); N. Indie, 1 female, DISTANT Coll. 1911-383, det. as *Stibaropus minor* WALK. (BMNH); E. Ind., 1 female, det. as *Aethus badius* WALKER's catal. (BMNH).

BURMA: Kathá, Birmania, FEA VI 1885: 3 females, det. as *Stibaropus minor* WALK., Museo Civico di Genova (MCSN, JAL), 2 females, det. as *S. minor* WALK., OSHANIN det. (ZIP), 2 females, det. as *Stibaropus flavidus* SIGN. = *testaceus* WALK.?, G. BREDDIN determ. (ZIZM), 1 female, DISTANT Coll., 1911-383 (BMNH).

NEPAL: Barabise geg., Ting-Sang-La, Nepal, 1 male, lg. H. FRANZ, ex collection E. HEISS, Innsbruck (JAL).

DISTRIBUTION. - India, Nepal, Burma.

LETHIERRY & SEVERIN (1893) listed also "Cochinchina", but there existed no primary paper for this record.

BIOLOGICAL DATA. - 2 males, 2 females and 1 larva were collected on Napier grass in India.

### Genus *Stibaropus* DALLAS

*Stibaropus* DALLAS, 1851: 125.

*Pachycnemis* JAKOVLEV, 1876: 54, syn. with *Stibaropus* by SIGNORET, 1881d: 43.

*Schiodtella* SIGNORET, 1882b: CLVII, new synonym.

*Neostibaropus* ESAKI in TAKANO & YANAGIHARA, 1939: 135, syn. with *Schiodtella* by LIS, 1991b: 169.

DIAGNOSIS. - The apex of peritreme bearing slender hook-like tooth on the posterior margin, coupled with the presence of posterior tarsi separate this genus from *Pseudostibaropus*.

DESCRIPTION. - Head wider than long; clypeus as long as or shorter than paraclypei, subapically with two peg-like setae; each paraclypeus with a row of submarginal peg-like setae; eyes protruding, ocelli present; antennae four (sg. *Schiodtella*) or five (sg. *Stibaropus* s. str.) segmented; rostrum 4-segmented, 2nd segment without semicircular lobe.



Pronotum broader than long, narrowed anteriorly; all angles broadly rounded, each lateral margin with a row of numerous submarginal setigerous punctures.

Scutellum longer than broad, apex broadly rounded.

Corium divided into clavus, meso- and exocorium; costa with numerous setigerous punctures; membrane hyaline or semihyaline, extending far beyond the tip of abdomen.

Apex of peritreme posteriorly with tooth.

Abdomen narrower than hemelytra, sternites with numerous long hair-like setae.

Legs short and stout, anterior tibia cultrate or falcate with tarsus arising at its midlength; middle tibia somewhat clavate with numerous setae and spines; posterior tibia stoutly club-shaped, apex obliquely truncated with U-shaped corbicle; all tarsi slender and long, 2nd segment shortest; posterior tarsi present.

TYPE OF GENUS. - *Scaptocoris molginus* SCHIÖDTE, 1847 (= *Stibaropus brunneus* DALLAS, 1851), by automatic fixation; of *Pachycnemis*, *Pachycnemis henkei* JAKOVLEV, 1876, by monotypy; of *Schioldtella*, *Scaptocoris tabulatus* SCHIÖDTE, 1847, present designation; of *Neostibaropus*, *Neostibaropus formosanus* ESAKI, 1939, by monotypy.

REMARKS. - At present the genus contains ten Oriental species; seven previously known, namely *S. callidus*, *S. formosanus*, *S. indonesicus*, *S. molginus*, *S. pseudominor*, *S. subglaber*, *S. tabulatus*, and three new to the science - *S. javanus*, *S. struempeli* and *S. sumatranus*. They can be divided into two groups on the basis of a number of antennal segments, as shown in the key.

#### Key to subgenera of *Stibaropus*

1. Antennae 4-segmented; 2nd segment long . . . . . ***Schioldtella*** (p. 25)
- . Antennae 5-segmented; 2nd segment minute . . . . . ***Stibaropus*** (p. 32)

#### Subgenus *Schioldtella* SIGNORET, new status

*Schioldtella* SIGNORET, 1882b: CLVII.

DIAGNOSTIC CHARACTERS. - Antennae 4-segmented, 2nd segment long; apex of peritreme sometimes amalgamated with the evaporative area.

TYPE OF SUBGENUS. - *Scaptocoris tabulatus* SCHIÖDTE, 1847.

*Stibaropus subglaber* BREDDIN, 1900 was incorrectly designated as the type-species of *Schioldtella* (Lis, 1991b). The designation was invalid, because *S. subglaber* was not among the species originally included in *Schioldtella* by SIGNORET (1882b); there were only *S. callidus*, *S. molginus* and *S. tabulatus* placed in this genus. The first two of these belong to *Stibaropus* s.str., thus only *S. tabulatus* is a true *Schioldtella*; therefore the latter is designated here as the type-species of the latter subgenus.

REMARKS. - In my previous papers (Lis, 1991b, 1991f) *Schioldtella* was treated as a separate genus. Nevertheless, I have realized during my further studies that the number of antennal segment (four in *Schioldtella*, five in *Stibaropus*) was the only important difference between these genera. All the remaining characters are

common for both of them, and therefore I decided to treat *Schiodtella* as a subgenus of *Stibaropus*.

The subgenus contains five Oriental species: four previously known, namely *S. tabulatus*, *S. formosanus*, *S. subglaber*, *S. javanus*, and one new to the science - *S. struempeli*.

#### Key to species of sg. *Schiodtella*

1. Eyes small, almost as small as ocelli (fig. 29), ocular index 10.2-13.2 ..... 2.
- Eyes large, distinctly larger than ocelli (fig. 25, 34), ocular index 5.1-7.5 ..... 3.
2. Each lateral margin of pronotum with 8-11 submarginal setigerous punctures; posterior part of pronotal disc almost smooth, with fine wrinkles and a few tiny punctures; paramere as in fig. 33 ..... **secundus** Lis (North China)
- Each lateral margin of pronotum with 15-25 submarginal setigerous punctures; posterior part of pronotal disc distinctly transversely striated; paramere as in fig. 31 ..... **struempeli** (p. 28)
3. Head dorsally with distinct transverse rugae; rostrum long, reaching or surpassing posterior coxae; posterior part of pronotal disc distinctly transversely grooved usually without punctures between grooves (fig. 40), though sometimes a few punctures may be present; corbicle of posterior tibia with numerous crowded strong spines over its entire surface; paramere as in fig. 42 ..... **tabulatus** (p. 31)
- Head dorsally without transverse rugae; rostrum short, reaching at best the middle of mesosternum; posterior part of pronotal disc distinctly punctured, sometimes also slightly wrinkled; corbicle of posterior tibia with either a single median row of spines or irregularly scattered setae; paramere not as above ..... 4.
4. Ocular index 6.8-7.5; costa with 7-8 setigerous punctures; body length 6.3-7.1 mm ..... **formosanus** (p. 26)
- Ocular index 5.1-6.1; costa with 3-6 setigerous punctures; body length 5.3-6.2 mm ... 5.
5. Apex of clypeus strongly depressed; 2nd rostral segment distinctly longer than 3rd and 4th together; corbicle of posterior tibia medially without a row of strong spines, only irregularly scattered setae are present (fig. 28); paramere as in fig. 26 ... **javanus** (p. 27)
- Apex of clypeus not depressed; 2nd rostral segment almost as long as 3rd and 4th together; corbicle of posterior tibia medially with a row of strong spines (fig. 37); paramere as in fig. 35 ..... **subglaber** (p. 29)

#### ***Stibaropus (Schiodtella) formosanus* (ESAKI), new combination** (fig. 25)

*Neostibaropus formosanus* ESAKI in TAKANO & YANAGIHARA, 1939: 135; BOX, 1953: 36.

*Stibaropus saitoi* ESAKI & ISHIHARA, 1951: 44, syn. with *S. formosanus* by STICHEL, 1962: 774.

*Stibaropus formosanus*: ESAKI & ISHIHARA, 1951: 30; STICHEL, 1962: 774; HSIAO et al., 1977: 40 [part]; ANONYMOUS, 1977: 278; SCHAEFER, 1988: 31.

*Schiodtella formosana*: LIS, 1991b: 171.

Misidentification: HSIAO et al., 1977: 40 [part].

**DIAGNOSIS.** - The species is best diagnosed by a set of the following characters: the posterior part of pronotal disc distinctly punctured and only slightly wrinkled, the body length 6.3-7.1 mm, the ocular index 6.8-7.5, each lateral margin of the pronotum with 14-20 submarginal setigerous punctures, and the costa with 7-8 setigerous punctures.



DESCRIPTION. - Head (fig. 25) reddish brown or brown, striated, posteriorly with several punctures; clypeus slightly shorter than paraclypei, subapically with 2 peg-like setae; each paraclypeus with a row of 8-11 submarginal peg-like setae; eyes red, ocular index 6.8-7.5; ocelli yellowish brown, interocellar index 4.2-4.4; antennae yellowish brown; rostrum yellowish brown, surpassing fore coxae.

Pronotum reddish brown or brown; posterior part of disc distinctly punctured and only slightly grooved, the anterior with several punctures close to head; calli smooth; each lateral margin with a row of 14-20 submarginal setigerous punctures.

Scutellum of the same colour as pronotum; disc transversely striated, and with colourless sometimes hardly visible punctures.

Corium somewhat paler than pronotum and scutellum, almost evenly punctured with colourless punctures; costa with 7-8 setigerous punctures; membrane almost colourless, extending far beyond the tip of abdomen.

Propleuron brown with darker patches; apex of peritreme faintly differentiated from the evaporative area of metapleuron, tooth sometimes almost indistinct.

Sternites yellowish brown, finely wrinkled, with numerous long hair-like setae.

Legs brown, spines and setae brown and yellowish brown, tarsi yellowish brown.

Measurements (female only): body length 6.30-7.10; body width 3.95-4.50; head length 0.99-1.09; head width 1.08-1.26; pronotum length 1.66-1.85; pronotum width 3.17-3.85; scutellum length 2.19-2.61; scutellum width 2.07-2.54; antennal segments: 0.15-0.22 : 0.33-0.35 : 0.25-0.27 : 0.35-0.36.

#### MATERIAL EXAMINED (3 females)

CHINA: Shanghai, 93-52, 1 female, (JAL); Silatula, near Maimaikai, Mukden p. [=Shenyang], 1 female, BORTKIEVITSCH, 21 VIII 05 (ZIP); Tshidjaza, S. of Taidjap, Mukden [=Shenyang], 19 VII 05, BORTKIEVITSCH, 1 female, det. as *Stibaropus formosanus* TAK. & YAN., KERZHNER . 985 (ZIP).

DISTRIBUTION. - China (Jilin, Liaoning, Neimenggu, Tianjin, Shanxi, Shaanxi, Jiangxi, Jiangsu, Taiwan).

At least some of these records, as well as records from the Far East territory of Russia and probably also those from Japan pertain either to *Stibaropus* (*Schiodtella*) *secundus* (Lis) **n. comb.**, described recently from the Palaearctic part of China (Lis, 1991g), or to *Stibaropus* (*Schiodtella*) *struempeli*.

BIOLOGICAL DATA. - The species was recorded as a pest of *Saccharum* (TAKANO & YANAGIHARA, 1939; ESAKI & ISHIHARA, 1951; BOX, 1953). It injures also wheat, corn, millet and sorghum; its life-cycle lasts more than two years, it overwinters in a soil in the nymphal and adult stages, it is oligophagous and prefers plants belonging to *Graminae* (ANONYMOUS, 1977).

REMARK. - The type material of both, *Neostibaropus formosanus* (Taiwan, China) and *Stibaropus saitoi* (Shanxi, China) has not been found despite repeated efforts.

### ***Stibaropus* (*Schiodtella*) *javanus*, new species**

(figs. 26-28)

DIAGNOSIS. - The eyes larger than the ocelli (ocular index 5.1-6.0), the distinctly punctured posterior part of pronotal disc, and the costa with 3-4 setigerous punctures make the new species easily distinguishable from any other Oriental representative of the subgenus, except *S. subglaber*. From the latter, it differs in the depressed apex of clypeus, the corbicle of the posterior tibia medially without a row of strong spines, the 2nd rostral segment distinctly longer than 3rd and 4th together, and in the shape of parameres.

**DESCRIPTION.** - Head reddish brown, brown or dark brown, lateral margins somewhat paler; dorsal surface almost entirely distinctly wrinkled; clypeus distinctly shorter than paraclypei, its apex depressed and subapically with two peg-like setae; each paraclypeus with a row of 7-9 submarginal peg-like setae arising from distinctly developed crenulations; sometimes more than one (1-3) primary setigerous punctures are present close to clypeus; eyes reddish brown, larger than ocelli in diameter, ocular index 5.12-6.0; ocelli of the same colour as eyes, interocellar index 5.3-6.5; antennae and rostrum yellowish brown, the latter almost reaching anterior margin of middle coxae, 2nd rostral segment longer than 3rd and 4th together.

Pronotum of the same colour as head; posterior part of disc distinctly punctured with large colourless punctures; each lateral margin with a row of 13-23 submarginal setigerous punctures; anterior part of disc with transverse row of 12-14 setigerous punctures just behind the head.

Scutellum of the same colour as pronotum, punctured (especially in lateral parts) and wrinkled; apex almost smooth.

Corium more yellowish than pronotum and scutellum; clavus weakly punctured; mesocorium with irregularly scattered colourless punctures, better visible in basal part than in the apical, one row of punctures parallels clavo-corial suture; exocorium with puncturation denser than that of mesocorium; costa with 3-4 setigerous punctures; membrane colourless, distinctly surpassing the tip of abdomen.

Propleuron brown or yellowish brown, depression with small punctures; meso- and metapleuron brown or dark brown, evaporative areas yellow; apex of peritreme with small, but well visible tooth.

Abdomen yellow or yellowish brown, posterior and lateral part of each sternite with long brown setae.

Legs yellowish brown; anterior tibiae strongly curved, apical half blackish brown; corbicle of posterior tibia medially with long setae, not arranged in a row (fig. 28).

Penis as in fig. 27, paramere as in fig. 26.

Measurements (male and female respectively): body length 5.62, 5.25-6.25; body width 3.27, 3.26-4.15; head length 0.89, 0.95-1.11; head width 1.12, 1.18-1.31; pronotum length 1.51, 1.54-1.80; pronotum width 2.85, 2.75-3.34; scutellum length 2.17, 2.07-2.34; scutellum width 1.95, 1.85-2.17; antennal segments: 0.17 : 0.26 : 0.21 : 0.34, 0.15-0.17 : 0.25-0.28 : 0.21-0.22 : 0.35-0.38.

**TYPE MATERIAL EXAMINED**

Holotype male: [INDONESIA]: F.C. DRESCHER, G. Tangkoeban Prahoe, 4000-5000 Voet, Preanger, Java, V.1936, FCD 103 (RNH).

Paratypes: 3 females: [INDONESIA]: F.C. DRESCHER, G. Tangkoeban Prahoe, 4000-5000 Voet, Preanger, Java, I.1936 (1 female), II.1936 (1 female), III.1936 (1 female), FCD 103 (RNH, JAL).

**DISTRIBUTION.** - Java.

***Stibaropus (Schiodtella) struempeli*, new species**

(figs. 29-32)

*Stibaropus formosanus*, not of ESAKI: HSIAO et al., 1977: 40 [part].

**DIAGNOSIS.** - The new species differs from all Oriental representatives of the subgenus in having the eyes almost as small as the ocelli. In this character the species is very closely related to *Stibaropus (Schiodtella) secundus* LIS from the Palaearctic part of China, but it can be separated from the latter by a number of

setigerous punctures on lateral margins of pronotum (8-15 in *secundus*, 15-25 in *struempeli*), the sculpture of the posterior part of pronotal disc (almost smooth, with fine transverse wrinkles and a few tiny punctures in *secunda*, distinctly transversely striated in *struempeli*), and by the shape of parameres.

DESCRIPTION. - Head brown or reddish brown, lateral margins blackish brown, dorsal surface entirely distinctly striated; clypeus as long as paraclypei, subapically with two peg-like setae; each paraclypeus with a row of 9-12 submarginal setigerous punctures (8-10 peg-like setae and 1-2 hair-like setae); eyes small, almost as small as ocelli (fig. 29), ocular index 11.1 (male) or 13.2 (female), eyes and ocelli of the same colour as head, interocellar index 4.8 (in male) or 3.7 (in female); rostrum yellowish brown, surpassing middle of mesosternum; antennae yellowish brown.

Pronotum brown, partly castaneous brown; dorsal surface (except calli) distinctly transversely striated (fig. 30); each lateral margin with a row of 17-25 (male) or 15-16 (female) submarginal setigerous punctures.

Scutellum of the same colour as pronotum, transversely striated, but not as distinctly as on pronotum; apex broadly rounded with hardly visible wrinkles and a few tiny punctures.

Corium more yellowish, especially in the basal part; puncturation hardly visible; costa with 5-8 setigerous punctures (male 7-8, female 5-6); membrane hyaline, slightly browned, not surpassing the apical part of abdomen.

Propleuron yellowish brown, impunctate; meso- and metapleuron yellowish brown, evaporative area only slightly darker, apex of peritreme not well differentiated.

Sternites yellowish brown with numerous long hair-like setae.

Legs yellowish brown, not specifically modified; anterior tibiae more elongated and more slender than those of *Stibaropus* (*Schiodtella*) *secundus*.

Apical part of penis as in fig. 32; paramere as in fig. 31.

Measurements (male and female respectively): body length 5.13, 4.82; body width 3.76, 3.06; head length 1.08, 1.00; head width 1.06, 1.01; pronotum length 1.41, 1.28; pronotum width 2.92, 2.51; scutellum length 2.18, 2.08; scutellum width 2.07, 1.74; antennal segments: 0.17 : 0.36 : 0.23 : 0.37, 0.19 : 0.36 : 0.20 : 0.38.

#### TYPE MATERIAL EXAMINED

Holotype male: [CHINA]: Prov. Fo-Kien (China), G. SIEMSEN vend. 14.XI.1903 (ZIZM).

Paratype female: [CHINA]: Prov. Fo-Kien (China), G. SIEMSEN vend. 31.V.1904 (ZIZM).

DISTRIBUTION. - South China (Fujian).

REMARK. - The species is dedicated to Prof. Dr. H. STRÜMPER (ZIZM) with thanks for his great hospitality during my visits at the Hamburg University.

### ***Stibaropus* (*Schiodtella*) *subglaber* (BREDDIN), new combination** (figs. 34-37)

*Stibaropus subglaber* BREDDIN, 1900: 286; BERGROTH, 1908: 148.

*Schiodtella subglabra*: LIS, 1991b: 171.

DIAGNOSIS. - The best characters separating this species from all other members of the subgenus (except *S. javanus*) are, as follows: the posterior part of pronotal disc conspicuously punctured, and only slightly transversely wrinkled; the eyes

larger than the ocelli, the ocular index 5.5-6.1; the costa with 4-6 setigerous punctures. The species differs from *S. javanus* in having not depressed apex of clypeus, the 2nd rostral segment almost as long as the 3rd and 4th together, and the corbicle of the posterior tibia medially with a row of strong spines; males differs also in the shape of parameres.

**DESCRIPTION.** - Head (fig. 34) yellowish brown, reddish brown or brown, distinctly grooved; clypeus slightly shorter than paraclypei, subapically with two peg-like setae; paraclypei with a row of 7-9 submarginal peg-like setae; eyes reddish brown or brown, ocular index 5.5-6.1; ocelli reddish brown or yellow, interocellar index 3.3-5.4; antennae yellowish brown or brown; rostrum light brown, yellowish brown or brown, surpassing fore coxae, 2nd segment almost as long as the 3rd and 4th together.

Pronotum of the same colour as head, disc punctured and slightly grooved, sometimes with a transverse depression behind calli; each lateral margin with a row of 14-29 submarginal setigerous punctures.

Scutellum of the same colour as pronotum, almost smooth; lateral parts slightly punctured and striated.

Corium yellowish brown or pale brown, lighter than scutellum and pronotum, with colourless punctures scattered mostly in the basal half; costa with 4-6 setigerous punctures; membrane long, hyaline, sometimes slightly browned, distinctly surpassing the tip of abdomen.

Propleuron brown or yellowish brown, depression either impunctate or with a few small punctures; meso- and metapleuron yellow or yellowish brown; apex of peritreme with distinct slender tooth (fig. 39).

Sternites yellow, yellowish brown or brown, with numerous long brown or dark brown setae.

Legs brown or yellowish brown, anterior tibiae (fig. 38) as in *S. javanus*; corbicle of posterior tibia medially with a row of strong spines (fig. 37).

Penis as in fig. 36, paramere as in fig. 35.

Measurements (male and female respectively): body length 4.25-6.0, 5.15-6.20; body width 2.85-3.65, 3.05-4.00; head length 0.75-0.98, 0.85-1.10; head width 0.99-1.12, 1.02-1.19; pronotum length 1.12-1.71, 1.39-1.58; pronotum width 2.49-2.98, 2.61-3.00; scutellum length 1.90-2.19, 1.93-2.32; scutellum width 1.68-2.10, 1.78-2.17; antennal segments: 0.10-0.17 : 0.32-0.39 : 0.22-0.28 : 0.29-0.35, 0.14-0.19 : 0.28-0.36 : 0.22-0.29 : 0.32-0.36.

#### TYPE MATERIAL EXAMINED

Lectotype female of *Stibaropus subglaber* BREDDIN (designated by LIS, 1991b: 171): [INDONESIA]: Soekaranda, Januar 1894, DOHRN; Type: *Stibaropus subglaber* BREDD., Typus!; Mus. Zool. Polonicum, Warszawa, 12/45, Lectotype (IZPAS).

Paralectotypes: 7 females and 1 male: [INDONESIA]: Soekaranda, Januar 1894, DOHRN; *Stibaropus subglaber* BREDD., Edmund SCHMIDT determ. 1914; Mus. Zool. Polonicum, Warszawa, 12/45, Paralectotype (IZPAS).

#### OTHER MATERIAL EXAMINED (6 males, 9 females)

INDONESIA: Java Oriental, Mt Ardoeno, 1 female, VAN LANSBERG, coll. R.I.Sc.N.B., det. as *Schiodtella Borrei* n. sp., syntype (IRSNB); Sumatra, Deli, 5 females 6 males, DE BUSSY, 1043, coll. Dr. D. MAC GILLAVRY (ZMA, JAL); Sumatra, Medan, 1 female Aug. 1917, 2. det. as *Stibaropus molginus* SCHL., W. STICHEL jr., Zool. Mus. Berlin (MNHU); Sumatra, Soekaranda, 2 female Januar 1894, DOHRN, det. as *Stibaropus subglaber* (HNHM).

**DISTRIBUTION.** - Java, Sumatra.

***Stibaropus (Schiodtella) tabulatus* (SCHIØDTE), new combination**  
(figs. 40-42)

*Scaptocoris tabulatus* SCHIØDTE, 1847: 459.

*Stibaropus tabulatus*: STÅL, 1876: 17; SIGNORET, 1881d: 45; ATKINSON, 1887: 40; LETHIERRY & SEVERIN, 1893: 61; DISTANT, 1902: 85; SORAUER, 1956: 30.

*Schiodtella tabulata*: SIGNORET, 1882b: CLVII; LIS, 1991f: 313.

**DIAGNOSIS.** - The species is best diagnosed by a set of the following characters: the eyes distinctly larger than the ocelli; the posterior part of pronotal disc distinctly transversely grooved with either none or only a few punctures between grooves; each lateral margin of pronotum with 9-13 submarginal setigerous punctures; the head dorsally with distinct transverse rugae; the rostrum long, reaching posterior coxae; the corbicle of the posterior tibia with crowded numerous spines over the entire surface.

**DESCRIPTION.** - Head (fig. 41) reddish brown or brown, dorsally with distinct and deep transverse rugae; clypeus slightly shorter than paraclypei, subapically with two peg-like setae; each paraclypeus with a row of 8-12 submarginal peg-like setae; eyes reddish brown, placed in depressed lateral parts of head, ocular index 6.21-7.50; ocelli reddish brown, interocellar index 3.5-4.4; antennae brown or yellowish brown; rostrum reaching posterior coxae, 2nd segment distinctly shorter than 3rd and 4th together.

Pronotum (fig. 40) with anterior part of disc reddish brown or brown, calli sometimes with darker patches, posterior part more yellowish brown and entirely distinctly transversely grooved, without or with a few punctures between grooves; several small punctures occur sometimes behind head; each lateral margin with a row of 9-13 submarginal setigerous punctures.

Scutellum (fig. 40) either of the same colour as the posterior part of pronotal disc or lighter, disc impunctate, but with distinct deep transverse grooves.

Corium of the same colour as scutellum, sometimes exocorium paler; the latter broad and with a few colourless punctures; mesocorium with irregularly scattered (sometimes hardly visible) colourless punctures; costa with 3-6 setigerous punctures; membrane brown, milky brown or yellowish brown, semihyaline, surpassing the tip of abdomen.

Propleuron brown or yellowish brown, impunctate; apex of peritreme with small and slender tooth; evaporative area on mesopleuron small.

Sternites yellowish brown or brown, slightly wrinkled, posteriorly with numerous long setae.

Legs yellowish brown, anterior tibiae modified as in *S. formosanus*; corbicle of posterior tibia with numerous crowded strong spines over the entire surface.

Paramere as in fig. 42.

Measurements (male and female respectively): body length 6.57-7.75, 6.05-8.15; body width 4.17-5.25, 3.56-5.20; head length 1.08-1.23, 1.01-1.45; head width 1.49-1.61, 1.31-1.65; pronotum length 2.15-2.51, 1.85-2.56; pronotum width 3.51-4.15, 2.85-4.27; scutellum length 2.61-3.32, 2.49-3.34; scutellum width 2.24-2.56, 1.83-2.71; antennal segments: 0.19-0.26 : 0.46-0.54 : 0.31-0.39 : 0.49-0.56, 0.18-0.31 : 0.45-0.59 : 0.35-0.39 : 0.49-0.55.

**TYPE MATERIAL EXAMINED**

Holotype female of *Scaptocoris tabulatus* SCHIØDTE: [INDIA]: Travancore, Koefod, *Tabulatus* SCHIØ., (Orig.); Type (ZMC).

**OTHER MATERIAL EXAMINED (6 males, 6 females)**

INDIA: Satyamangalam, Coimbatore, 4 males 3 females 11-12-25, Sucking tobacco roots, P.N.K. coll.,

Pres by Imp. Bur. Ent., Brit. Mus. 1926-212; det. as *Stibaropus tabulatus* SCHIÖDTE (BMNH); India, Rajah-mundry, A. Pradesh, 2 males 3 females 1992?, sp.6.fm., roots of Lanka tobacco, IIE 22236, Brit. Mus. (BMNH).

DISTRIBUTION. - India.

BIOLOGICAL DATA. - SORAUER (1956) reported this species as occurring on roots of tobacco (*Solanaceae*); all examined specimens have also been collected sucking tobacco roots.

### Subgenus *Stibaropus* s.str.

DIAGNOSTIC CHARACTERS. - Antennae 5-segmented, 2nd segment minute; apex of peritreme always conspicuously differentiated from the evaporative area; a tooth on the posterior margin of peritremal apex distinctly developed.

TYPE OF SUBGENUS. - *Scaptocoris molginus* SCHIÖDTE, 1847 (= *Stibaropus brunneus* Dallas, 1851).

REMARKS. - At present the subgenus contains five Oriental species: four previously known, namely *S. callidus*, *S. pseudominor*, *S. indonesicus*, *S. molginus*, and one new to the science - *S. sumatranus*. The last three of these are very easy to separate from one another and also from the former two. Unfortunately, *S. callidus* and *S. pseudominor* appeared to be very closely related species, morphologically almost similar. There exists no problem to separate males of both species, due to the different shape of genital structures; some may arise when females are taken into consideration. The best, but at present state of our knowledge only tentative character which can be helpful in distinguishing females of *S. callidus* from those of *S. pseudominor* is the ocular index, thought unfortunately sometimes it may not prove true. Further detailed studies on these species may provide new and most reliable distinguishing characters.

#### Key to species of sg. *Stibaropus* s.str.

1. Body length not exceeding 8.0 mm ..... 2.
- Body length exceeding 8.0 mm ..... 4.
2. Rostrum long, either reaching or surpassing posterior coxae, 3rd and 4th rostral segment together distinctly longer than the 2nd ..... *sumatranus* (p. 39)
- Rostrum reaching at best middle of mesosternum, 3rd and 4th rostral segment together almost as long as the 2nd ..... 3.
3. Eyes large, ocular index 2.5-3.7 (2.5-3.7 in female, 2.6-3.6 in male), paramere as in fig. 46 ..... *callidus* (p. 33)
- Eyes small, ocular index 3.6-6.6 (3.7-5.5 in female, 3.6-6.6 in male), paramere as in fig. 58 ..... *pseudominor* (p. 38)
4. Eyes large, ocular index 2.8-4.4; paramere as in fig. 54 ..... *molginus* (p. 36)
- Eyes small, ocular index 5.0-5.7; paramere as in fig. 49 ..... *indonesicus* (p. 35)



***Stibaropus (Stibaropus) callidus* (SCHIÖDTE)**  
(figs. 43-47)

*Scaptocoris callidus* SCHIÖDTE, 1847: 460.

*Stibaropus callidus*: STÅL, 1876: 17; SIGNORET, 1881d: 46; ATKINSON, 1887: 41; LETHIERRY & SEVERIN, 1893: 61; DISTANT, 1901a: 100 [part], 1902: 85; MAXWELL-LEFROY, 1909: 305; MAXWELL-LEFROY & HOWLETT, 1909: 674; KUMAR, 1962: 45 & 53; HASEGAWA, 1962: 6; CARVALHO, 1968-1969: fig. 1; PAWAR, 1973: 111; AHMAD et al., 1979: 15 & 19; MOIZUDDIN & AHMAD, 1990: 333; LIS, 1991f: 315.

*Scaptocoris terginus* SCHIÖDTE, 1847: 461; SIGNORET, 1881d: 42 [part], LETHIERRY & SEVERIN, 1893: 61; syn. with *S. callidus* by FROESCHNER, 1960a: 368.

*Schiöldtella callidus*: SIGNORET, 1882b: CLVII.

*Stibaropus minor* WALKER, 1867: 166; LIS, 1991b: 167; syn. with *S. callidus* by LIS, 1991f: 315.

*Stibaropus* (?) *minor*: ATKINSON, 1887: 42; LETHIERRY & SEVERIN, 1893: 61.

Misidentifications: SIGNORET, 1881d: 42 [part]; DISTANT, 1899a: 218, 1901a: 100 [part], 1902: 85; PAIVA, 1907: 17; MAXWELL-LEFROY, 1909: 305; BOX, 1953: 36; MOIZUDDIN & AHMAD, 1990: 333.

**DIAGNOSIS.** - The body length not exceeding 8.0 mm, the short rostrum reaching at best the middle of mesosternum, the 2nd rostral segment almost as long as the 3rd and 4th together, and the ocular index ranging from 2.5 to 3.7 separate this species from any other within the subgenus.

**DESCRIPTION.** - Head (fig. 43) brown, reddish brown or chocolate brown; clypeus slightly shorter than paraclypei, subapically with two peg-like setae; each paraclypeus with a row of 9-13 submarginal peg-like setae; dorsal surface entirely wrinkled; eyes large, brown or blackish brown, distinctly protruding, ocular index 2.5-3.7 (2.5-3.7 in female, 2.6-3.6 in male); ocelli orange or brown, interocellar index 8.0-13.0; antennae brown or yellowish brown; rostrum brown, short, reaching at best middle of mesosternum, 2nd rostral segment almost as long as 3rd and 4th together.

Pronotum of the same colour as head; anterior lobe only slightly wrinkled, the posterior distinctly transversely wrinkled and punctured; anterior lobe sometimes darker than the posterior; each lateral margin with a row of 11-23 submarginal setigerous punctures.

Scutellum of the same colour as pronotum, transversely striated and punctured, especially in lateral parts; apex almost impunctate.

Corium usually somewhat lighter than pronotum and scutellum, distinctly punctured with colourless punctures which are smaller than those on scutellum and pronotum; costa with 3-9 setigerous punctures; membrane hyaline, long, extending far beyond the tip of abdomen.

Legs from pale brown to dark brown; distal part of fore tibia as well as tibial spines blackish brown (fig. 44); corbicle of posterior tibia with a band of strong spines close to the outer margin.

Sternites yellowish brown, brown or dark brown, covered with brownish hair-like setae, especially on posterior margins.

Apex of peritreme with distinct slender tooth (fig. 45).

Paramere and penis as in figs. 46 & 47, respectively.

Measurements (male and female respectively): body length 4.50-6.50, 5.25-7.50; body width 2.91-3.44, 3.02-3.51; head length 0.80-0.95, 0.90-1.01; head width 1.23-1.37, 1.24-1.35; pronotum length 1.46-1.71, 1.54-1.91; pronotum width 2.65-3.17, 2.85-3.22; scutellum length 2.09-2.66, 2.07-2.60; scutellum width 1.78-2.10, 1.93-2.24; antennal segments: 0.10-0.15 : 0.05-0.07 : 0.21-0.24 : 0.20-0.27 : 0.31-0.38, 0.12-0.20 : 0.05-0.08 : 0.22-0.27 : 0.24-0.28 : 0.32-0.36.

## TYPE MATERIAL EXAMINED

Lectotype male of *Scaptocoris callidus* SCHIÖDTE (designated by Lis, 1991f: 316): [INDIA]: Sirampur, ELBERLING, *callidus* SCHIO.; Type, Lectotype (ZMC).

Paralectotypes of *Scaptocoris callidus* SCHIÖDTE: 2 females: [INDIA]: Type; *callidus* SCHIÖDTE, Paralectotype (ZMC).

Holotype male of *Scaptocoris terginus* SCHIÖDTE: [mislabelling]: Brasilia, Mus. Colsm., *Terginus* SCHIO.; Type (ZMC).

Lectotype female of *Stibaropus minor* WALKER (designated by Lis, 1991b: 168): [BURMA]: Birmah 6226; Type; 2. *Stibaropus minor*, Brit. Mus., Type. No. Hem. 270, Lectotype, det. J. A. Lis 1990 (BMNH).

## OTHER MATERIAL EXAMINED (30 males, 59 females)

INDIA: Annandale, Balighai near Puri, Orissa, at light, 1 female 1 male 26-X-08, DISTANT coll., B.M. 1911-383 (BMNH, JAL); Bengal, NIETNER, Nr. 3797, 2 females, det. as *Stibaropus minor* WALKER, det. J.A. Lis, Zool. Mus. Berlin (MNHU); Bihar, at lamp, 1 female 28.X.14, 1 male 30.X.14, PUSA coll., From Ind. Mus., DISTANT coll., B.M. 1911-383 (BMNH); Calcutta: 1 male, STOLIZKA, 1866, 1 male, Dr. STEINER 1910, det. as *Stibaropus callidus* SCHIÖDTE, det. R. C. FROESCHNER 59, Coll. Nat.-Mus. Wien (NHMW), 2 females 2 males, Mus. Collr., 4-XI-07, 19-XI-07, DISTANT Coll., B.M. 1911-383 (BMNH, JAL), 2 females 1 male, No. 897, 1-6.X.1967, on lamps, leg. Gy. TOPAL (HNHM, JAL); Ostindien, 1 female 1 male, det. as *Stibaropus callidus* SCHIÖDTE, det. R.C. FROESCHNER 59, Coll. Nat.-Mus. Wien (NHMW); Rajmahal, Bengal, 1 male 6-VII-09, at light on banks of R. Ganges (ZIP); New Delhi, lichtfang, 2 females, lg. H. FRANZ, Collection E. HEISS, Innsbruck (EHC, JAL).

NEPAL: E. Nepal, Inaruwa, 150m, Sunsari Dist., 3 females 31.X.1981, M. TOMOKUNI, Nat. Sc. Mus. (NSMT, JAL).

BURMA: Nieder-Burma, oberhalb Rangoon, a. Unterl. d. Irawati, 2 males 1 female, H. SCHRADER leg. 1913, Dr. M. KNOTH ded., Eing. Nr. 193 1930 (ZIZM); Rangoon, 21 females 7 males, SCHNEEHAGEN leg., det. as *Stibaropus callidus* SCHIÖDTE, G. BREDDIN determ. (ZIZM); Rangoon, Birmania: 1 male, FEA VI 1887 and 1 male, Don P. DUPUIS, det. as *Stibaropus minor* WALKER (IRSNB), 1 female, FEA 1886, coll. R.I.Sc.N.B., det. as *Stibaropus pseudominor* Lis (IRSNB), 1 male, 1-14 V 02, GUDYENKO (ZIP), 1 female, FEA 1886, Museo Civico di Genova, det. as *Stibaropus callidus* SCHIÖDTE (MCSN), 1 female, 25-30/11. 34, Malaise, D. LESTON coll., Pres. 1965 (HEC), 2 females, ARCHIBALD Coll., B.M. 1926-391 (BMNH, JAL), 2 males, FEA 1886, Birma, Leonardo FEA leg., vend. 1.I.1895, det. as *Stibaropus callidus* SCHIÖDTE, G. BREDDIN determ. (ZIZM); Burma, Rangoon, 2 females 1936, K. SUBRAHMANIAN, Pres by Imp. Inst. Ent., B.M. 1937-79 (BMNH); Taungoo, 1 female, L. FEA X.87, DISTANT Coll. 1911-383, det. as *callidus* SCHIÖDTE, BERGR. (BMNH); Kathá, Birmania, FEA VI 1885: 3 females 1 male, det. as *Stibaropus callidus* SCHIÖDTE, det. OSHANIN (ZIP), 1 male, Birma, Leonardo FEA leg., vend. 1.I.1895, det. as *Stibaropus callidus* SCHIÖDTE, G. BREDDIN determ. (ZIZM); Palon, Pegu, 2 females, FEA VIII-IX 87, Museo Civico di Genova, det. as *Stibaropus callidus* SCHIÖDTE, det. DISTANT (MCSN); S. Shan, States Road, 40 km E. of Taunggyi, 3 females 4 males 25 IX-13 X 34, MALAISE (HEC, JAL).

BANGLADESH: Rangpur, 1 male, light, 4.8.64, Coll. M.U. SIDDIQUI, det. as *Stibaropus callidus* (SCHIO) (NHMUK).

LAOS: Laos, 1 female, Museum Leiden, Vitalis DE SALVAZA (RNH); Luang Prabang, Muong Kop, 1 female 8.V.1920, R.V. DE SALVAZA, det. as *Stibaropus callidus* SCHIÖDTE (RNH); Vientiane, 1 female 6.VI.1919, Mus. Leiden, R.V. DE SALVAZA, det. as *Stibaropus callidus* SCHIÖDTE (RNH); Laos, Xieng Kop, 1 female V-1920, R. Vitalis DE SALVAZA (RNH).

VIETNAM: Bam Som Di, 2 females 31-X-1919, R.V. DE SALVAZA, Mus. Leiden, Indo-China, Tonkin, R.V. DE SALVAZA 1917-98 (RNH).

THAILAND: C. Siam, 150m, Kwae Noi Riv. Exp., Niki, 1 female 23.IV.-5.V., Museum Leiden, J.E. JONKERS 1946 (RNH).

DISTRIBUTION. - Pakistan, India, Sri Lanka, Nepal, Bangladesh, Burma, Laos, Vietnam, Thailand.

Records from Philippines (Box, 1953) pertained to *S. pseudominor*.

BIOLOGICAL DATA. - Found flying in the evening on the banks of the Hugli River (ATKINSON, 1887; DISTANT, 1902). MAXWELL-LEFROY (1909) reported that nymphs were found deep in the soil, as well as after rain at light.

Adults fly at night and are also found among the roots of plants; the species appears to be most common near large rivers in loamy soil (MAXWELL-LEFROY & HOWLETT, 1909).



***Stibaropus (Stibaropus) indonesicus* Lis**

(figs. 48-50, 52)

*Stibaropus* sp.: SCHOUTEDEN, 1933: 44; Lis, 1991e: 310.

*Stibaropus molginus*, not of SCHIÖDTE: WILBRINK, 1912: 1111; Box, 1953: 36 [part]; SORAUER, 1956: 30; SCHAEFER, 1988: 31.

*Stibaropus indonesicus* Lis, 1991f: 320.

**DIAGNOSIS.** - The body length exceeding 8.0 mm, and the ocular index ranging from 5.0 to 6.5 separate this species from any other in the subgenus.

**DESCRIPTION.** - Head (fig. 48) brown, dark brown or castaneous, distinctly wrinkled; clypeus shorter than paraclypei, subapically with two peg-like setae; each paraclypeus with a row of 10-14 submarginal peg-like setae; eyes small, brown or dark brown, ocular index 5.0-6.5; ocelli yellow, yellowish brown or reddish brown, interocellar index about 5.0-7.8; antennae yellowish brown or brown; rostrum yellow or yellowish brown, surpassing middle coxae, sometimes reaching the posterior.

Pronotum castaneous, brown or light brown; anterior lobe smooth and somewhat darker than the posterior, the latter distinctly transversely wrinkled and only slightly punctured; each lateral margin with a row of 28-39 submarginal setigerous punctures.

Scutellum of the same colour as the posterior part of pronotum, disc distinctly wrinkled; apex almost smooth.

Corium somewhat lighter than scutellum; mesocorium evenly punctured, especially in basal half; exocorium densely punctured with wedge-shaped impunctate area; each costal margin with 7-17 setigerous punctures; membrane hyaline, brownish, extending beyond the apex of abdomen.

Legs brown or pale brown, tarsi yellowish brown; fore tibiae long and curved (fig. 52), tibial spines blackish brown; corbicle of posterior tibia with numerous spines close to the outer margin.

Sternites yellowish brown, smooth, laterally sometimes slightly striated; posterior parts of segments covered with brownish hair-like setae.

Apex of peritreme with long curved hook-like tooth similar to that of *S. molginus*.

Paramere and penis as in figs. 49 & 50, respectively.

Measurements (male and female respectively): body length 8.51, 8.57-9.91; body width 4.45, 5.37-6.20; head length 1.45, 1.72-2.03; head width 1.58, 1.92-2.17; pronotum length 2.27, 2.85-3.38; pronotum width 3.88, 4.76-5.63; scutellum length 3.05, 3.58-4.45; scutellum width 2.54, 3.02-3.95; antennal segments: 0.28 : 0.10 : 0.49 : 4th and 5th missing, 0.28-0.43 : 0.10-0.14 : 0.49-0.60 : 0.42-0.45 : 0.47-0.49.

**TYPE MATERIAL EXAMINED**

Holotype male of *Stibaropus indonesicus* Lis: [INDONESIA]: Sumatra, Palembang. M. KNAPPERT, coll. Dr. D. MAC GILLAVRY, *Stibaropus molginus* SCHIÖDTE, det. M. GILL.; *Stibaropus indonesicus* Lis, det. J.A. Lis, Holotype (ZMA).

Paratypes: 1 female: [INDONESIA]: Oost-Java, Blitar, IX 1912-IV 1913, coll. W.H.J. v. d. BEEK, acq. VI 1945, *Stibaropus indonesicus* Lis, det. J.A. Lis, Paratype (ZMA); 2 females: Noesa Kambangan, F.C. DRESCHER, coll. Dr. D. MAC GILLAVRY, 15-21 II 1926, 22-28 III 1926, *Stibaropus indonesicus* Lis, det. J.A. Lis, Paratype (ZMA, JAL).

**OTHER MATERIAL EXAMINED (3 females)**

INDONESIA: Java, 3 females, ex coll. TEPL. M. (RNH, JAL).

**DISTRIBUTION.** - Java, Sumatra.

Most probably also the record of *Stibaropus* sp. from Sulawesi (SCHOUTEDEN,

1933) pertains to this species (see Lis, 1991f).

**BIOLOGICAL DATA.** - The species feeds on roots of *Saccharum*, and was recorded as a pest of this plant (WILBRINK, 1912; BOX, 1953; SORAUER, 1956; SCHAEFER, 1988). Life-cycle, eggs and larval stages described by WILBRINK (1912).

***Stibaropus (Stibaropus) molginus* (SCHJØDTE)**

(figs. 51, 53-56)

*Scaptocoris molginus* SCHJØDTE, 1847: 458.

*Stibaropus molginus*: STÅL, 1876: 17; SIGNORET, 1881d: 45; ATKINSON, 1887: 39; LETHIERRY & SEVERIN, 1893: 61; DISTANT, 1899a: 218, 1901a: 100, 1902: 84; MAXWELL-LEFROY, 1909: 305; MAXWELL-LEFROY & HOWLETT, 1909: 674; BOX, 1953: 36 [part]; LIS, 1991b: 168, 1991f: 319.

*Schiodtella molginus*: SIGNORET, 1882b: CLVII.

*Stibaropus brunneus* DALLAS, 1851: 125; WALKER, 1867: 166; STÅL, 1876: 17, syn. by. DISTANT, 1899a: 218.

*Stibaropus latipes*, not of WESTWOOD: ATKINSON, 1887: 39; SIGNORET, 1881d: 44; LETHIERRY & SEVERIN, 1893: 61.

*Stibaropus* [sic!] *molginus*: TAKENOUCI & MURAMOTO, 1968: 14.

*Stibaropus molignus* [sic!]: AHMAD et al., 1979: 15 & 20; MOIZUDDIN & AHMAD, 1990: 334.

Misidentifications: WILBRINK, 1912: 1111; BOX, 1953: 36 [part]; SORAUER, 1956: 30; SCHAEFER, 1988: 31.

**DIAGNOSIS.** - The body length exceeding 8.0 mm, and the ocular index ranging from 2.8 to 4.4 separate this species from any other in the subgenus.

**DESCRIPTION.** - Head (fig. 53) dark brown or dark castaneous; clypeus slightly shorter than paraclypei, subapically with two peg-like setae; each paraclypeus with a row of 12-18 submarginal peg-like setae; dorsal surface rugosely wrinkled and punctured; eyes large, brown or blackish brown, ocular index 2.8-4.4; ocelli of the same colour as eyes, sometimes yellowish brown, interocellar index about 9.0-14.0; antennae yellowish brown or brown; rostrum yellowish brown or brown, reaching posterior coxae.

Pronotum dark brown or dark castaneous; anterior half almost smooth, with a patch of punctures behind the head; posterior half transversely grooved and sometimes distinctly punctured; each lateral margin with a row of 17-32 submarginal setigerous punctures.

Scutellum of the same colour as pronotum, punctured and transversely wrinkled; apex almost smooth.

Corium of the same colour as scutellum, or slightly lighter; puncturation denser is basal half, punctures somewhat smaller than those on scutellum and pronotum; costa with 5-15 setigerous punctures; membrane semihyaline, browned, extending far beyond the tip of abdomen.

Legs of the same colour as the ventral surface of body with the exception of distal part of fore tibiae and tibial spines, which are blackish brown; fore tibiae (fig. 55) not as long as in *S. indonesicus*; corbicle of posterior tibia with several strong spines close to the outer margin.

Sternites yellowish brown or brown, laterally wrinkled, posterior part of each segment covered with brownish hair-like setae.

Apex of peritreme with long, curved hook-like tooth (fig. 56).

Paramere and penis as in figs. 54 & 51, respectively.

Measurements (male and female respectively): body length 8.35-12.65, 8.50-14.0; body width 4.65-7.37, 5.25-7.74; head length 1.33-1.98, 1.64-2.05; head width 1.82-2.62, 2.10-2.93; pronotum length 2.61-3.86, 2.85-4.09; pronotum width 4.22-6.71, 4.70-6.90; scutellum length 3.38-3.93, 3.85-4.51; scutellum width

2.73-4.24, 3.23-4.56; antennal segments: 0.21-0.32 : 0.11-0.14 : 0.45-0.58 : 0.39-0.52 : 0.41-0.54, 0.25-0.35 : 0.11-0.14 : 0.54-0.62 : 0.45-0.52 : 0.50-0.59.

#### TYPE MATERIAL EXAMINED

Lectotype female of *Scaptocoris molginus* SCHIÖDTE (designated by LIS, 1991f: 319): [BANGLADESH]: Rangpur, Bengala, *Molginus* SCHIO.; Type, Lectotype (ZMC).

Paralectotype female of *Scaptocoris molginus* SCHIÖDTE: [BANGLADESH]: *molginus* SCHI.; Type, Paralectotype (ZMC)

Lectotype female of *Stibaropus brunneus* DALLAS (designated by LIS, 1991b: 168): [INDIA]: N. India, 48134; Type; *Stibaropus brunneus*; *Stibaropus brunneus* DALLAS, Type; Brit. Mus. Type. No. Hem. 275, Lectotype det. J.A. LIS 1990 (BMNH).

#### OTHER MATERIAL EXAMINED (40 males, 33 females)

PAKISTAN: Allabad, 1 female 8. 8. 1977, 1 female 11. 8. 1977, 1 female 8. 9. 1977, 1 female 10. 3. 80, on light, Coll. RANA, det. as *Stibaropus molginus* (SCHI.) (NHMUK).

INDIA: Calcutta, 1 female 1866, STOLIZKA, det. as *St. latipes*, Coll. Nat.Mus. Wien (NHMW); India orient, 361.15, 1 female, det. as *latipes* det. SIGN., *Stibaropus molginus* (HNHM); Moghal Sarai, 1 female Sep. 18.03., C.S. BETTON, 1906-189 (BMNH); N. Indien, Coll. SIGNORET, 1 female det. as *latipes* det. SIGNORET, 1 male det. as *brunneus* det. SIGNORET, Coll. Nat.-Mus. Wien (NHMW); Muséum Paris, Assam, 1 male, WESTWOOD 1849 (MNHN); Bihar, at lamp, 1 male 27.IX.14, PUSA Coll. 1915-164, det. as *Stibaropus molginus* SCHIÖDTE (BMNH).

BURMA: Birmania, Sheninaga, 1 female VI 1885, FEA, Museo Civico di Genova, det. as *Stibaropus molginus* SCHI. (MCSN), 2 females 8 VI 1885, FEA, det. as *Stibaropus molginus* SCHIÖDTE, OSHANIN det. (ZIP); Kathá, Birmania, 1 male, FEA VI 1885, 92, Birma, Leonardo FEA leg., vend. 1.1.1895, det. as *Stibaropus latipes* WESTW., G. BREDDIN determ. (ZIZM); Rangoon, 10 males 3 females, SCHNEEHAGEN leg., det. as *Stibaropus latipes* WESTW., G. BREDDIN determ. (ZIZM); Nieder-Burma, oberhalb Rangoon a. Unterl. d. Irawati, 1 female, H. SCHRADER leg. 1913, Dr. M. KNOTH ded., Eing. Nr. 193 1930 (ZIZM); Burma, Rangoon, 2 females 1 male V-VI-1927, F.J. MEGGITT, Pres by Imp. Bur. Ent. Brit. Mus. 1928-442 (BMNH); Tenasserim, 1 male, ATKINSON Coll. 92-3 (BMNH).

LAOS: Laos, 1 male, Museum Leiden, Vitalis DE SALVAZA, det. as *Stibaropus molginus* SCHIÖDTE (RNH); Loas, Kong Kiet, 2 males Oct. 1915, R.V. DE SALVAZA, det. as *Stibaropus molginus* SCHIÖDTE (RNH).

VIETNAM: Long Xuyem, Cochinchina, 1 female, det. as *Stibaropus Brunneus* DALL., Muséum Paris, Coll. E. FLEUTIAUX 1919 (MNHN); Saigon, 1 female, det. as *Stibaropus latipes* WESTW., Muséum Paris, Coll. NOUALHIER 1898 (MNHN); Cochinchine, 4 males 2 females, Muséum Paris, Coll. NOUALHIER 1898 (MNHN, JAL); Mekong, 2 males 4 females, Muséum Paris, Cochinchine, HARMAND 1876 (MNHN, JAL); Laska Ht. Tonkin, Indo-China, 2 males 3 females Juli 1913, Museum Leiden, E. LE MOULT, Coll. VITALIS, det. as *Stibaropus molginus* SCHIÖDTE (RNH); Tayninh, Cochinchina, 2 females Oct. 1923, Museum Leiden, E. LE MOULT, Coll. VITALIS, det. as *Stibaropus molginus* SCHIÖDTE (RNH); Thado Par Cuaras, Prov. De Vins, Annam 400m, 1 male Maart-April 1913, Museum Leiden, E. LE MOULT, Coll. VITALIS, det. as *Stibaropus molginus* SCHIÖDTE (RNH).

CAMBODIA: reg. de Chiehreng, 7 females 12 males 1912, G. THOMAS (IRSNB, JAL); Cambodge, Kompong Luong, 1 male, Muséum Paris (MNHN); Muséum Paris, Cambodge, Angkor-Vat, 2 males, Coll. A. BONHORE 1909 (MNHN, JAL); Cambodie, 1 female, det. as *Stibaropus brunneus* WALKER's catal. (BMNH); Camboja, 1 male, Pres by Perth Museum, B.M. 1953-629, det. as *Stibaropus latipes* WESTW. (BMNH).

THAILAND: Bangkok, 1 male 25 July 1981, Pornehai (BMNH); Siam, 1 male, A. PAVIE 1886, Muséum Paris (MNHN).

MALAYSIA: Malaya, Perak, 2 females, det. as *Stibaropus latipes* WESTW. E. SCHMIDT, 1919 (IZPAS); Malacca, Perak, 1 male, det. as *Stibaropus molginus* (HNHM).

DISTRIBUTION. - Pakistan, India, Bangladesh, Burma, Laos, Vietnam, Cambodia, Thailand, Malaya.

Listed also from Philippines (Box, 1953), but I had no material to confirm the occurrence of this species there. The records of *S. molginus* from Java (WILBRINK, 1912; SORAUER, 1956; SCHAEFER, 1988) pertain to *S. indonesicus* (see LIS, 1991f).

BIOLOGICAL DATA. - Nymphs were found at the roots of a palm at a considerable depth below the surface (MAXWELL-LEFROY & HOWLETT, 1909). Numerous adults were recorded at light (AHMAD et al., 1979; MOIZUDDIN & AHMAD, 1990). Box (1953) reported it as a sugar-cane insect.

***Stibaropus (Stibaropus) pseudominor* Lis**

(figs. 57-60)

*Stibaropus callidus*, not of SCHIÖDTE: DISTANT, 1901: 100 [part]; Box, 1953: 36.*Stibaropus pseudominor* Lis, 1991b: 168, 1991f: 317.

**DIAGNOSIS.** - The body length not exceeding 8.0 mm, the short rostrum reaching at best the middle of mesosternum, the 2nd rostral segment almost as long as 3rd and 4th together, and the ocular index ranging from 3.6 to 6.6 separate this species from any other member of the subgenus.

**DESCRIPTION.** - Head brown, castaneous or blackish brown; clypeus shorter than paraclypei, subapically with two peg-like setae; each paraclypeus with a row of 9-12 submarginal peg-like setae; dorsal surface wrinkled, especially laterally; eyes brown or blackish brown, ocular index 3.6-6.6 (3.7-5.5 in female, 3.6-6.6 in male); ocelli orange or yellowish brown, interocellar index 4.5-10.0; antennae yellowish brown or brown; rostrum brown or yellowish brown, extending beyond anterior coxae and reaching at best middle of mesosternum, 2nd segment almost as long as 3rd and 4th together.

Pronotum of the same colour as head; anterior half almost smooth, the posterior wrinkled and punctured; each lateral margin with a row of 14-22 submarginal setigerous punctures.

Scutellum of the same colour as pronotum, disc punctured and transversely striated, but somewhat weaker than in *S. callidus*; apex sometimes almost impunctate.

Corium of the same colour as scutellum, sometimes somewhat paler, basal half evenly punctured, but punctures smaller than those on scutellum and pronotum, apical half with weaker puncturation; costal margin with 3-9 setigerous punctures; membrane semihyaline, slightly browned, extending far beyond abdominal apex.

Legs from pale brown to dark brown; distal part of fore tibiae (fig. 57) as well as tibial spines blackish brown; corbicle of posterior tibia with a band of spines close to the outer margin.

Sternites yellowish brown or brown, covered with brownish hair-like setae, as in *S. callidus*.

Evaporatoria and peritreme as in *S. callidus*.

Paramere and penis as in figs. 58 & 59, respectively.

Measurements (male and female respectively): body length 4.87-6.40, 5.25-7.00; body width 2.83-3.81, 3.07-4.15; head length 0.77-1.09, 0.99-1.15; head width 1.15-1.32, 1.16-1.36; pronotum length 1.22-1.76, 1.51-1.81; pronotum width 2.46-3.34, 2.73-3.43; scutellum length 2.02-2.71, 2.32-2.95; scutellum width 1.73-2.34, 1.90-2.49; antennal segments: 0.12-0.21 : 0.06-0.10 : 0.21-0.31 : 0.19-0.28 : 0.28-0.35, 0.18-0.22 : 0.06-0.10 : 0.28-0.32 : 0.22-0.28 : 0.35-0.37.

**TYPE MATERIAL EXAMINED**

Holotype male of *Stibaropus pseudominor* Lis: [MALAYA]: Malacca, FISCHER, Zool. Mus. Berlin, *Stibaropus pseudominor* Lis, Holotype, det. J.A. Lis (MNHU).

**OTHER MATERIAL EXAMINED** (35 males, 88 females, 32 larvae)

INDIA: India, Poona, 1 female 19160, Dept. Agric. (JAL).

BURMA: Birmania, Schwegoo-Myo, 1 male Ottobre 1885, FEA, Museo Civico di Genova, det. as *Stibaropus callidus* SCHI. (MCSN).

SOUTH CHINA: Nanning Kwangai, China, 1 female, Museum Leiden, E. LE MOULT (RNH).

LAOS: Vientian, 1 female 30 X 1984 1 male 27 I-I II 1986, at light, KABAKOV (ZIP, JAL); Haut Mékong, Houei Sai, 1 female 18-30.V.1918, R.V. DE SALVAZA, Indochina, R.V. DE SALVAZA 1918-1, det. as *Stibaropus callidus* SCH. (BMNH); Annam, Laos, 1 female (JAL); Laos, 1 male, Museum Leiden, Vitalis DE SALVAZA (RNH).

VIETNAM: Annam, Phuc-Son, Nov. Dez., H. FRÜHSTORFER: 1 male Coll. Nat.-Mus. Wien, det. as *Stibaropus callidus* SCHIÖDTE by R.C. FROESCHNER 59 (NHMW), 1 male, H. FRÜHSTORFER vend. 10.XII.1901 (ZIZM); Hajiang, Tonkin, 3 females 1 male (ZIP, JAL); Hanoi: 2 females, 3963, collection E. DE BERGEVIN, det. as *Stibaropus* nov. species ? (MNHN), 1 female 9 X 1917, JEANVOINE (ZIP), 1 male 1 female, Tonkin/1937, LE MOULT VEND., via REINBEK, Eing. Nr. 1 1957 (ZIZM); Tonkin, 1 male 2 females, L. BLASIE, Muséum Paris, coll. Ph. FRANCOIS, coll. L. BEDEL 1922 (MNHN, JAL); Tonkin, env. d'Hanoi (Demange), 1 male 1 female, V. LABOISSIERE 1924, Muséum Paris (MNHN); Hanoi, Hotel Kim lien, 1 female 28-31.V.1966, Exp. Gy. TOPAL, No. 588, collected on lamp (HNHM), Hanoi City, Ho Tay, No.4, on light, 57 females 11 males 8.X.1986, leg. VÁSÁRHELYI (HNHM, JAL); Hanoi, 40 m, l'hotel, á la lumiere, 1 female 30.X.1963, T. POCs (HNHM); Tonkin, 2 females, det. as *Stibaropus minor* (HNHM); Ban Som Di, 1 male 31-X-1919, Indo-China, Tonkin, Mus. Leiden, R.V. DE SALVAZA 1917-98 (RNH); Saigon, 1 female, det. as *S. flavidus* SIGNORET, 221, LETHIERRY, ATKINSON Coll. 92-3, det. as *Stibaropus minor* WALK. (BMNH).

THAILAND: Pachim District, Siam, 1 female 2 males, 98-48 (BMNH, JAL); C. Siam, 150m, Kwae Noi Riv. Exp., Niki, 1 male 23.IV.-5.V., J.E. JONKERS 1946, Museum Leiden (RNH).

MALAYSIA: Malaya, Kuala Lumpur, Gardens, 1 female 20.3.1941, 1 male 12.12.1948, coll. H.M. PENDELBURY, light, Ex F.M.S. Museum, B.M. 1955-354 (BMNH, JAL); Perak, 1 male, SHARP Coll., 1905-313 (BMNH); Perak, 1 female II-III.1900 (Kwala-Kangsar), B. JACHAN vend., 15.VII.1900 (ZIZM); West Malaysia, Perlis, Gula Perlis, 1 female 1 male 27.5.85, MARDIM 13716, TEE S.P., C.I.E. Coll., A. 17124 (BMNH); Perlis, Cuping, 3 females 4 males 11.12.1985, Jabatan Pertanian, *Saccharum officinarum* L. (roots), C.I.E. Coll., A. 17713 (BMNH, JAL); Perlis, Kangar, 3 females 3 males 32 larvae, on roots of sugarcane, C.I.E. Coll., A. 17608 (BMNH, JAL); Malaya, Pahang Kuala, Jahan, 1 male Feb. 3rd 1923, at light, Ex F.M.S. Museum, B.M. 1955-354, det. as *Stibaropus callidus* SCHIÖDTE, M.S.K. GHAMRI det. (BMNH).

PHILIPPINES: Luzon, Philippines, Banga-an (1650m), Sagada Mountain, Pv., 1 female 21.VII.1985, M. SAKAI leg. (NSMT).

DISTRIBUTION. - India, Burma, South China (Guangxi), Laos, Vietnam, Thailand, Philippines, Malaya.

BIOLOGICAL DATA. - 32 larvae and 6 adults have been found on roots of sugarcane (*Saccharum officinarum* L.). Some other specimens have been recorded at light.

### ***Stibaropus (Stibaropus) sumatranus*, new species**

(figs. 61-62)

DIAGNOSIS. - The body length not exceeding 8.0 mm, the long rostrum either reaching or surpassing the posterior coxae, and the rostral segments 3rd and 4th together distinctly longer than the 2nd separate this species from any other in the subgenus. In the shape of parameres the species is related to *S. indonesicus*, but can be easily distinguished from the latter by the body size (6.52-7.75 in *S. sumatranus*, 8.51-9.91 in *S. indonesicus*), and the number of setigerous punctures on the costa and the pronotum (3-7 and 15-19 in *S. sumatranus*, 10-17 and 28-39 in *S. indonesicus*).

DESCRIPTION. - Head brown or reddish brown, dorsal surface wrinkled; clypeus shorter than paraclypei, subapically with two peg-like setae; each paraclypeus with a row of 9-11 submarginal peg-like setae; eyes reddish brown, small, ocular index 4.90-6.16; ocelli pale brown or yellowish brown, interocellar index 6.8-9.5; antennae and rostrum orange brown or yellowish brown; the latter either reaching or surpassing posterior coxae, 3rd and 4th rostral segment together distinctly longer than the 2nd.

Anterior half of pronotum almost smooth, of the same colour as head; the posterior pale brown or orange brown, laterally slightly grooved, medially with several small punctures; each lateral margin with a row of 15-19 submarginal setigerous punctures.

Scutellum of the same colour as the posterior half of pronotum; disc slightly transversely grooved, especially in lateral parts; apex almost smooth.



Corium of the same colour as scutellum, though sometimes clavus more yellowish; the latter with two rows of punctures and numerous punctures between them; mesocorium almost evenly punctured, two rows of punctures parallel clavo-corial suture; exocorium evenly punctured, wedge-shaped smooth area occurs close to mesocorium; costa with 3-7 setigerous punctures.

Propleuron pale brown or yellowish brown, smooth; meso- and metapleuron brown, evaporative areas yellowish brown; apex of peritreme with long and slender hook-like tooth.

Abdomen yellowish brown, with numerous brown long hair-like setae.

Legs pale brown or yellowish brown, not specifically modified.

Penis as in fig. 61; paramere as in fig. 62.

Measurements (male and female respectively): body length 6.52-6.75, 7.50-7.75; body width 3.71-3.76, 4.22-4.34; head length 1.33-1.34, 1.45-1.47; head width 1.41-1.43, 1.54-1.57; pronotum length 2.00-2.02, 2.15-2.27; pronotum width 3.32-3.37, 3.63-3.95; scutellum length 2.46-2.68, 2.93-3.17; scutellum width 2.19-2.22, 2.44-2.73; antennal segments: 0.21-0.23 : 0.08-0.11 : 0.39-0.40 : 0.36-0.37 : 0.40-0.42, 0.22-0.24 : 0.11-0.13 : 0.43-0.48 : 0.39-0.45 : 0.42-0.45.

#### TYPE MATERIAL EXAMINED

Holotype male: [INDONESIA]: Sumatra, Bankoelen, K.J. VITH (RNH)

Paratypes: 1 male 2 females: [INDONESIA]: Sumatra, Manna, M. KNAPPERT (RNH, JAL).

DISTRIBUTION. - Sumatra.

### Subfamily *SEHIRINAE* AMYOT & SERVILLE

*Séhirides* AMYOT & SERVILLE, 1843: 96.

DIAGNOSIS. - The subfamily is best diagnosed by a set of the following characters: the trichobothria of sternites III-VII arranged in more or less transverse pairs posterior to the spiracles, the 2nd antennal segment as long as or longer than the 1st, and the tarsi with the 2nd segment thinner than the 1st or 3rd.

DESCRIPTION. - Body convex dorsally, sometimes slightly flattened.

Head semicircular or subtriangular; paraclypei with (*Amaurocorini*) or without (*Sehirini*) setigerous punctures; ocelli present; antennae 5-segmented.

Pronotum broader than long; lateral margins carinated, each with either numerous distinct setae (*Amaurocorini*) or a few short, almost indistinct hair-like setae (*Sehirini*).

Scutellum longer than broad, apex rounded.

Hemelytron with distinct membrane and corium; the latter divided into clavus, meso- and exocorium; costal margins either with (*Amaurocorini*) or without (*Sehirini*) setigerous punctures.

Propleuron modified into anterior and posterior convexity; mesosternum with distinctly developed median carina, which may be hairless or laterally with a few short hairs; evaporative areas on meso- and metapleuron distinctly developed, though sometimes only surrounding the peritreme.

Sternites III-VII each with two trichobothria arranged in more or less transverse pairs posterior to the spiracle.

Legs slender; tarsi inserted at apices of tibiae, 2nd segment thinner than the 1st or 3rd.



TYPE OF SUBFAMILY. - Genus *Sehirus* AMYOT & SERVILLE, 1843.

DISTRIBUTION. - Representatives of the *Sehirinae* are known from all major faunal regions except the Neotropical and Australian.

REMARK. - *Ochetostethus orientalis* (Dist.) is the only genuine Oriental species of this subfamily; all the remaining species are Palaearctic elements penetrating into northern parts of the Oriental Region.

#### Key to tribes of *Sehirinae*

1. Lateral margins of head, pronotum and corium with long distinct setae; scutellum enlarged (fig. 74) ..... **Amaurocorini** (p. 41)
- Lateral margins of head, pronotum and corium without long distinct setae; scutellum normally developed (figs. 75 & 76) ..... **Sehirini** (p. 45)

#### Tribe *Amaurocorini* E. WAGNER

*Amaurocorini* E. WAGNER, 1963: 107.

*Scutellocorini* AHMAD, MOIZUDDIN & KHAN, 1979: 15, 19, fig. 14, syn. with *Amaurocorini* by LIS, 1993a: 61.

*Scutellocorini* AHMAD & MOIZUDDIN, 1980: 1; MOIZUDDIN & AHMAD, 1990: 327; syn. with *Amaurocorini* by LIS, 1991b: 172.

*Cydnini* [part]: LINNAVUORI, 1993: 111.

DIAGNOSTIC CHARACTERS. - Paraclypei with both primary and secondary setae (in a complete or incomplete submarginal row); eyes apically with one short setae; costa and lateral margins of pronotum submarginally with numerous long setae; apex of peritreme lobe-like, funnel-like or modified into elongated raised area.

TYPE OF TRIBE. - Genus *Amaurocoris* STAL, 1864; of *Scutellocorini* AHMAD, MOIZUDDIN & KHAN, 1979, *Scutellocoris* AHMAD, MOIZUDDIN & KHAN, 1979; of *Scutellocorini* AHMAD & MOIZUDDIN, 1980, *Scutellocoris* AHMAD & MOIZUDDIN, 1980.

DISTRIBUTION. - Representatives of the tribe have been reported from North and South Africa, and SW Asia (see LIS, 1993a).

REMARK. - In previous papers (see LIS, 1993a) genera belonging to the *Amaurocorini* were placed within either *Sehirinae* or *Cydninae*; recently LINNAVUORI (1993) treated the *Amaurocorini* as a synonym of the *Cydnini*. Nevertheless, as it was shown in one of my recent papers (LIS, 1993a) the tribe should be placed within the subfamily *Sehirinae* and treated as a sister group of the remaining representatives of the subfamily.

#### Key to genera of *Amaurocorini*

1. Apex of peritreme funnel-like (fig. 72); costa and pronotal margins with very long and slender hair-like setae (fig. 70) ..... ***Linospa*** (p. 43)
- Apex of peritreme lobe-like (fig. 66); costa and pronotal margins with shorter and stouter setae (fig. 64) ..... ***Amaurocoris*** (p. 42)

## Genus *Amaurocoris* Stål

*Amaurocoris* Stål, 1864: 31.

*Eurycoris* Signoret, 1865: 115, syn. with *Amaurocoris* by Stål, 1876: 22.

*Scutellocoris* Ahmad, Moizuddin & Khan, 1979: 15, 19, fig. 14, syn. with *Amaurocoris* by Lis, 1993a: 65.

*Scutellocoris* Ahmad & Moizuddin, 1980: 2, syn. with *Amaurocoris* by Linnavuori, 1993: 126.

**DIAGNOSIS.** - The genus can be distinguished from *Linospa* by the lobe-like apex of the peritreme (fig. 66), and the costa and the pronotal margins bearing short stout setae (fig. 64).

**DESCRIPTION.** - Head dorsally punctured, lateral margins distinctly turned up; clypeus parallel-sided, free, slightly longer than paraclypei, subapically with two setigerous punctures; each paraclypeus submarginally with several long and numerous short hair-like setae; eyes rounded and entirely protruding beyond lateral margins of head, ocelli small; antennae slender, 5-segmented.

Pronotum broader than long, punctured; each lateral margin with a row of submarginal setae, shorter and stouter than those of *Linospa*.

Scutellum slightly longer than broad, punctured; apex rounded and almost as broad as the width of basal part.

Exocorium broad, each costal margin with a row of submarginal setae, shorter and stouter than those of *Linospa*.

Prosternum with depression; mesosternum with hairless median carina; apex of peritreme modified into lobe-like auricle (fig. 66). Sternites densely punctured, bearing numerous long hair-like setae.

Male genital capsule with the anterior half of the dorsal wall distinctly elevated (fig. 68).

**TYPE OF GENUS.** - *Cydnus curtus* Brullé, 1839 (= *Amaurocoris laticeps* Stål, 1864), by automatic fixation; of *Eurycoris*, *Eurycoris niger* Signoret, 1865, by monotypy; of *Scutellocoris* Ahmad, Moizuddin & Khan, 1979, *Scutellocoris nigra* Ahmad, Moizuddin & Khan, 1979, by monotypy; of *Scutellocoris* Ahmad & Moizuddin, 1980, *Scutellocoris nigra* Ahmad & Moizuddin 1980, by original designation.

**REMARKS.** - Linnavuori (1993) divided the genus into two subgenera, namely *Amaurocoris* s.str. and *Hispidocydnus* Lv.; unfortunately, the latter appeared to be a junior synonym of the genus *Linospa* Sign.

### *Amaurocoris curtus* (Brullé)

(figs. 63-68, 74)

*Cydnus curtus* Brullé, 1839: 81.

*Amaurocoris curtus*: Noualhier, 1893: 6; Lis, 1993a: 66.

*Amaurocoris laticeps* Stål, 1864: 31, syn. with *A. curtus* by Puton, 1889: 309.

*Eurycoris niger* Signoret, 1865: 115, syn. with *A. laticeps* by Stål, 1876: 22.

*Amaurocoris subglaber* Horváth, 1919: 267, syn. with *A. curtus* by Linnavuori, 1989: 6.

*Scutellocoris nigra* Ahmad, Moizuddin & Khan, 1979: 19, 22, fig. 14, syn. with *A. curtus* by Lis, 1993a: 66.

*Scutellocoris nigra* Ahmad & Moizuddin, 1980: 4; Moizuddin & Ahmad, 1990: 327, objective synonym of *S. nigra*

Ahmad, Moizuddin & Khan, 1979, syn. with *A. curtus* by Linnavuori, 1993: 126.

*Lactistes rastallus* [sic!], not of Schiødt: Moizuddin & Ahmad, 1990: 346, fig. 23.

**DIAGNOSIS.** - It is the only known species of the genus.

**DESCRIPTION.** - Body length 4.80-6.50 (male) or 5.40-7.30 (female).

Head dark brown, blackish brown or black, entirely densely punctured with

exception of the posterior margin (fig. 63); each paraclypeus with a row of 9-11 submarginal setigerous punctures; eyes dark brown or blackish brown, ocular index 3.90-4.50; ocelli yellowish brown, interocellar index 4.6-6.6; antennae brown or dark brown, 3rd segment 0.94-1.35 times longer than the 2nd; rostrum brown or dark brown, surpassing middle of mesosternum.

Pronotum of the same colour as head, disc evenly punctured with exception of calli; each lateral margin with a row of 14-20 submarginal setigerous punctures.

Scutellum of the same colour as pronotum, evenly punctured except anterolateral angles; disc laterally with shallow median impressions.

Clavus and mesocorium sometimes more brownish than pronotum and scutellum; clavus with two rows of punctures; mesocorium evenly punctured, punctures in basal half larger than those in the apical, two additional rows of punctures parallel clavo-corial suture; exocorium with dense puncturation; costa with 13-22 setigerous punctures; membrane slightly browned, usually not surpassing the tip of abdomen.

Propleuron black, blackish brown or dark brown; depression punctured; peritreme and its apex as in figs. 65 & 66, respectively.

Paramere as in fig. 67, male genital capsule as in fig. 68.

#### TYPE MATERIAL EXAMINED

Lectotype male of *Cydnus curtus* BRULLÉ (designated by LIS, 1993a: 67): [CANARY ISLANDS]: Canaries, *curtus* Br., *Cydnus curtus* Br., Lectotype det. J.A. LIS, Muséum Paris, Coll. AM SERV. (MNHN).

Lectotype male of *Eurycoris niger* SIGNORET (designated by LIS, 1993a: 67): [SYRIA]: Syrien, Coll. SIGNORET, *laticeps* det. SIGNORET; Lectotype *Eurycoris niger* SIGN., labelled by R.C. FROESCHNER 59 (NhMW).

Paralectotype female of *Eurycoris niger* SIGNORET: [SYRIA]: together with the lectotype on the same pin (NhMW).

Holotype male of *Scutellocoris nigra* AHMAD & MOIZUDDIN: [PAKISTAN]: Host. on light, Loc. Karachi, Date. 25-10-1975, Coll. MOIZ.; *Scutellocoris nigra* AHMAD & MOIZUDDIN 1980; Holotype (NHMUK).

Paratypes of *Scutellocoris nigra* AHMAD & MOIZUDDIN: [PAKISTAN]: Host. on light, Loc. Karachi, Date: 7-II-1976 (1 male), 9-II-1976 (1 female), Coll. MOIZ., *Scutellocoris nigra*, Paratype, Gift to BMNH, B.M. 1984-233 (BMNH).

#### OTHER MATERIAL EXAMINED (4 males, 3 females)

PAKISTAN: Kurrachee, 2 males 1 female, Aout-Sept., Muséum Paris, MAINDRON 133-96 (MNHN); Pakistan, Larkana, 1 female 5.9.79, HEISS (EHC); Pakistan, Umg. Karachi, 1 male 1 female 22-30.9.1972, lg. HEISS, det. as *Amaurocoris curtus* Br. by SEIDENSTÜCKER 1973 (EHC, JAL).

?NORTH INDIA: Inde, 1 male, det. as *Amaurocoris laticeps* STÅL, Muséum Paris (MNHN).

DISTRIBUTION. - Eremian species reaching Afghanistan and North Pakistan on the southeastern area of its distribution. I suppose that the specimen labelled "Inde" probably has also been collected on the nowadays territory of Pakistan.

BIOLOGICAL DATA. - The species lives under plants and stones in sandy habitats. The type material of *Scutellocoris nigra* was collected at light (AHMAD et al., 1979; AHMAD & MOIZUDDIN, 1980).

### Genus *Linospa* SIGNORET

*Linospa* SIGNORET, 1884a: 527.

*Scutellocoris* [part]: AHMAD & MOIZUDDIN, 1980: 6; MOIZUDDIN & AHMAD, 1990: 327.

*Amaurocoris* sg. *Hispidocydnus* LINNAVUORI, 1993: 127, new synonym.

DIAGNOSIS. - The genus differs from *Amaurocoris* in the funnel-like apex of the peritreme (fig. 72), and both costal and pronotal margins bearing long and slender hair-like setae (fig. 70).

DESCRIPTION. - Head (fig. 70) dorsally smooth or punctured, lateral margins distinctly turned up; clypeus parallel-sided, free, slightly longer than paraclypei, subapically with two setigerous punctures; each paraclypeus submarginally with numerous hair-like setae; eyes rounded and entirely protruding beyond lateral margins of head, ocelli small; antennae slender, 5-segmented.

Pronotum broader than long, punctured; each lateral margin with a row of submarginal hair-like setae, longer and more slender than in *Amaurocoris*.

Scutellum slightly longer than broad, punctured or smooth; apex rounded and almost as broad as the width of basal part.

Exocorium broad, each costal margin with a row of setae, longer and more slender than those of *Amaurocoris*.

Prosternum with depression; mesosternum with hairless median carina; apex of peritreme funnel-like (fig. 72).

Sternites densely punctured, with numerous long hair-like setae.

Male genital capsule with the anterior half of the dorsal wall distinctly elevated.

TYPE OF GENUS. - *Cydnus hirtus* THUNBERG, 1783, by monotypy; of *Amaurocoris* sg. *Hispidocydnus*, *Amaurocoris orbicularis* JAKOVLEV, 1885, by original designation.

REMARK. - A review and a key to all known species of the genus were provided in one of my previous papers (Lis, 1993a). Representatives of *Linospa* and *Amaurocoris* sg. *Hispidocydnus* (recently described by LINNAVUORI, 1993) have the same shape of evaporatoria and the same modification of the peritremal apex (these structures differ distinctly from those of the genus *Amaurocoris*), and therefore *Amaurocoris* sg. *Hispidocydnus* should be treated as a junior synonym of *Linospa*. The best characters for separating members of *Linospa* from those of *Amaurocoris* are the shape of peritremal apex and the presence of different types of setae on body margins as shown in the key. A presence of long erect setae over the entire upper body surface of *L. hirta* (regarded by LINNAVUORI, 1993, as the generic character of *Linospa*) has no more than a specific value. A shape of paramere of *L. candida* (HORV.) - see LIS, 1993a: figs 19-20 - is intermediate between that of *L. orbicularis* (the type-species of *Amaurocoris* sg. *Hispidocydnus*) and that of *L. hirta* (the type-species of *Linospa*), and additionally supports the synonymization.

### *Linospa orbicularis* (JAKOVLEV)

(figs. 69-73)

*Amaurocoris orbicularis* JAKOVLEV, 1885: 110.

*Amaurocoris aspericollis* PUTON, 1886: 15, syn. with *A. orbicularis* by KERZHNER, 1964: 365.

*Scutellocoris fusca* AHMAD, MOIZUDDIN & KHAN, 1979: 15, 19, nomen nudum.

*Scutellocoris fusca* AHMAD & MOIZUDDIN, 1980: 6; MOIZUDDIN & AHMAD, 1990: 327, syn. with *Amaurocoris* (*Hispidocydnus*) *orbicularis* by LINNAVUORI, 1993: 127.

*Lactistes vicinus*, not of SIGNORET: MOIZUDDIN & AHMAD, 1990: 346, fig. 24.

*Linospa orbicularis*: LIS, 1993a: 72.

DIAGNOSIS. - It is the only species of the genus reported from the Oriental Region.

DESCRIPTION. - Body length 6.40-7.20 (male) or 6.50-7.70 (female).

Head black, blackish brown or brown, almost entirely distinctly punctured; clypeus longer as paraclypei, subapically with two setigerous punctures; each paraclypeus with 9-11 submarginal hair-like setae; eyes grayish brown, ocular index 3.40-4.20; ocelli yellowish orange or brown, interocellar index 4.0-4.3;

antennae yellowish brown, 2nd segment 1.05-1.25 times longer than the 3rd; rostrum yellowish brown or brown, reaching middle coxae.

Pronotum black or brownish black, distinctly and densely punctured, calli narrow and almost smooth; each lateral margin with 35-60 long slender setae.

Scutellum blackish brown or almost black, evenly punctured, except anterolateral angles, which are smooth and somewhat impressed; all punctures of the same size as those on pronotum.

Corium dark castaneous or sometimes blackish brown, distinctly punctured; clavus with one or two almost complete and two short partial rows of punctures; exocorium densely punctured; costa with more than 30 long slender setae; membrane milky yellow, slightly browned, broader and longer than abdomen.

Propleuron dark castaneous, depression with numerous punctures; evaporatoria as in fig. 71, apex of peritreme as in fig. 72.

Anterior tibia as in fig. 69.

Paramere as in fig. 73.

#### TYPE MATERIAL EXAMINED

Holotype male of *Scutellocoris fusca* AHMAD & MOIZUDDIN: [PAKISTAN]: Host. on light, Loc. Allabad, Date. 8.9.1977, Coll: RANA; *Scutellocoris fusca* AHMAD & MOIZUDDIN 1908; Holotype (NHMUK).

Paratypes of *Scutellocoris fusca* AHMAD & MOIZUDDIN: [PAKISTAN]: Host. on light, Loc. Allabad, Date: 1-8-1977 (1 male), 8-8-1977 (1 female), Coll: RANA; *Scutellocoris fusca*, Paratype, Gift to BMNH, B.M. 1984-223 (BMNH).

#### OTHER MATERIAL EXAMINED (2 males)

PAKISTAN: Allabad, 1 male 7.2.80, coll. RANA; det. as *Scutellocoris fusca* by AHMAD (NHMUK); Khairpur, 1 male 8-10-1961, on wings, coll. KARIM (JAL).

**DISTRIBUTION.** - A well-known Palearctic (eremian) species reaching North Pakistan on the southeastern area of its distribution.

**BIOLOGICAL DATA.** - The species lives under plants and stones in sandy habitats. The type material of *S. fusca* was collected on light (AHMAD & MOIZUDDIN, 1980).

### Tribe *Sehirini* AMYOT & SERVILLE

**DIAGNOSTIC CHARACTERS.** - Paraclypei with neither primary nor secondary type of vestiture; eyes apically without setae; lateral margins of pronotum with a few short, hardly visible hair-like setae; costa without setigerous punctures, sometimes with a few short, almost indistinct bristles; apex of peritreme elongated, scimitar-shaped.

**TYPE OF TRIBE.** - Genus *Sehirus* AMYOT & SERVILLE, 1843.

**DISTRIBUTION.** - Members of the tribe have been reported from all major faunal regions, except the Australian and Neotropical; they are most abundant in the Palearctic Region.

**REMARKS.** - Up to now only four species of the *Sehirini* have been reported from the area of study, namely *Adomerus rotundus* (HSIAO), *Canthophorus niveimarginatus* SCOTT, *Crocistethus major* HSIAO, and *Ochetostethus orientalis* (DISTANT). The first two of these are with no doubt East Palearctic species recorded also in the northern parts of the Oriental Region; the third is known only by the female holotype from Sichuan (China), and most probably also represents an element of the East Palearctic fauna. Thus only *O. orientalis* from Burma can be regarded as a true representative of the Oriental fauna, though it is also known

only by the holotype specimen.

Since my studies on the Old World *Sehirinae* are in progress now and it will cause the necessity of redefinition of numerous *Sehirini* genera, I think it premature (and at the present state of our knowledge even almost impossible) to give in this paper the certain diagnosis and description of each genus. Therefore for greater ease of identification of the species recorded up to now from the studied area, I provide only a key for their determination supported by a short description of each species, and in some cases by a comparison with related East Palearctic congeners.

#### Key to species of *Sehirini*

1. Body with blue-violet metallic reflections; mesocorium medially without whitish spots . . . *Canthophorus niveimarginatus* (p. 47)
- Body without blue-violet metallic reflections; mesocorium medially with one or two distinct whitish spots . . . 2.
2. Veins of membrane reticulated . . . *Crocistethus major* (p. 47)
- Membrane with veins not reticulated . . . 3.
3. Corium almost of the same colour as pronotum and scutellum; costa creamy white; mesocorium with one elongated whitish spot (fig. 75) . . . *Adomerus rotundus* (p. 46)
- Corium distinctly paler than pronotum and scutellum; costa of the same colour as mesocorium; the latter with two whitish spots (fig. 76) . . . *Ochetostethus orientalis* (p. 48)

#### *Adomerus rotundus* (Hsiao)

(fig. 75)

*Legnotus rotundus* Hsiao in Hsiao et al., 1977: 52 & 297.

*Legnotus breviguttulus* Hsiao in Hsiao et al., 1977: 51 & 297, syn. with *A. rotundus* by Kanyukova, 1988: 918.

*Adomerus rotundus*: Kanyukova, 1988: 918.

**DESCRIPTION.** - Body black, blackish brown or brown, 3.4-6.3 mm in length.

Head distinctly evenly punctured; clypeus free, as long as or slightly shorter than paraclypei; eyes reddish brown or almost black, ocelli reddish brown; rostrum reaching middle coxae.

Pronotum, except calli, distinctly punctured; lateral carinae creamy white with a few short, hardly visible hair-like setae. Scutellum evenly punctured except anterolateral angles. Corium evenly punctured; costa creamy white with a few short, hardly visible hair-like setae; elongated whitish spot on mesocorium about twice as long as broad.

Abdomen distinctly punctured, lateral margins creamy white.

#### TYPE MATERIAL EXAMINED

Holotype male of *Legnotus rotundus* Hsiao: [CHINA]: China (Tianjin), 23.ix.1973, S.Z. Ren leg.; Holotype; *Legnotus rotundus* Hsiao 1974 (DBNU).

Holotype female of *Legnotus breviguttulus* Hsiao: [CHINA]: China (Beijing), 31.viii.1958; Holotype; *Legnotus breviguttulus* Hsiao 1974 (DBNU).

#### OTHER MATERIAL EXAMINED (4 females)

CHINA: China, Tientsin, 1 female June 1902 (JAL); Shan-hai-Kwan, In Mountains, 1 female 1.IX.06 (JAL).

HONG KONG: Hongkong, (5), 2 female 1992, N.T. Lam Tsuen Riv. (JAL).



**DISTRIBUTION.** - East Palaearctic species known from the Far East territory of Russia, East China (Beijing, Tianjin, Shangdong, Jiangsu) and Hong Kong.

**REMARKS.** - This species is closely related to two East Palearctic species, namely *Adomerus triguttulus* (MOTSCHULSKY) and *A. notatus* (JAKOVLEV) (= *Legnotus longiguttulus* HSIAO). It differs from *A. triguttulus* in its unicolorous scutellum (apex of scutellum is white in *A. triguttulus*), and in its unicolorous inner margin of the posterior femur (posterior femur is white in the middle of the inner margin in *A. triguttulus*). From *A. notatus* the species differs in the length of whitish spot on mesocorium - the spot is 3-4 times longer than broad in *A. notatus*, while it is twice as long as broad in *A. rotundus*.

### ***Canthophorus niveimarginatus* SCOTT**

*Canthophorus niveimarginatus* SCOTT, 1874: 295; SIGNORET, 1881a: 657, 1884b: 57.  
*Sehirus niveimarginatus* [sic!]: HSIAO et al., 1977: 50.

**DESCRIPTION.** - Body black or blackish brown with blue-violet metallic reflections, 6.0-8.0 mm in length.

Head distinctly punctured; apex of clypeus covered by paraclypei; eyes black or blackish brown, ocelli reddish brown; rostrum surpassing middle of mesosternum.

Pronotum except calli evenly punctured; lateral carinae creamy white with a few short, hardly visible hair-like setae. Scutellum evenly punctured except anterolateral angles. Corium evenly punctured; costa creamy white with a few short, hardly visible hair-like setae.

Abdomen laterally distinctly punctured, with creamy white lateral margins.

**MATERIAL EXAMINED** (3 males, 3 females)

**SOUTH CHINA:** China, Prov. Fokien, 1 female G. SIEMSEN vend. 1.4.1914 (MNHN); Haut Plateau Yunnanais, Distr. de Yunnan-Fou, 1850 A 2000 M - 25 Lat N, 2 males 1 female, Muséum Paris, Dr. LEGENDRE 1915 (MNHN, JAL).

**EAST INDIA:** Ostindien, 1 female, Coll. SIGNORET, det. as *niveimarg.* by SIGNORET (NhMW).

**NORTH VIETNAM:** Lang Son, 1 male, GIRARD 216-94 (JAL).

**DISTRIBUTION.** - East Palearctic species known from the Far East territory of Russia, Japan, Korea, Mongolia, China (Neimenggu, Hebei, Shandong, Shanxi, Shaanxi, Jiangsu, Yunnan, Fujian), North Vietnam and East India.

Recorded also from Finland.

**REMARK.** - The species differs from the West Palearctic *C. dubius* (SCOP.), which has also been reported from North China, in black or blackish brown membrane (membrane is whitish in *C. dubius*).

### ***Crocistethus major* HSIAO**

*Crocistethus major* HSIAO in HSIAO et al., 1977: 50 & 296.

**DESCRIPTION.** - Body length 5.7 mm.

Head black, shining, distinctly punctured with large punctures; clypeus in apical part slightly covered laterally by paraclypei; eyes blackish brown, protruding, ocular index 3.9; ocelli reddish brown; antennae dark brown, 3rd segment 1.7 times longer than the 2nd; rostrum reaching middle of mesosternum.

Pronotum shining, black, lateral carinae yellowish; disc distinctly punctured, especially laterally.

Scutellum of the same colour as pronotum; disc punctured, especially in the basal and lateral parts.

Corium dark brown, densely punctured; costa yellow; outer margin of exocorium and an irregular impunctate patch in the middle of mesosternum yellowish brown; membrane semihyaline, veins brown, reticulated.

Abdomen brownish black with numerous small punctures; lateral margins with yellowish brown narrow band in the anterior half of each segment.

Legs almost blackish brown.

#### TYPE MATERIAL EXAMINED

Holotype female of *Crocistethus major* HSIAO: [CHINA]: China (Sichuan Prov.): Bao-xing, 2200-2700m, 28.vi.1963, S.L. LIN leg.; Holotype; *Crocistethus major* HSIAO 1974 (DBNU).

DISTRIBUTION. - China (Sichuan).

### *Ochetostethus orientalis* (DISTANT)

(figs. 76-78)

*Sehirus orientalis* DISTANT, 1901b: 583, 1902: 108; BERGROTH, 1908: 151.

*Ochetostethus orientalis*: HORVÁTH, 1919: 271.

DESCRIPTION. - Head blackish brown, distinctly punctured; clypeus short, apically entirely covered by paraclypei; eyes blackish brown, ocular index 2.33; ocelli small, dark brown, interocellar index 7.6; antennae brown, 2nd and 3rd segment almost equal in length; rostrum pale brown, reaching the posterior margin of fore coxae.

Pronotum brownish black, posterior part paler, disc entirely distinctly densely punctured, and additionally with 5 shallow rounded impression behind the middle, and one anteriorly.

Scutellum brownish black, distinctly densely punctured, disc with one rounded shallow impression in the middle of anterior part.

Corium brown with two distinct polished whitish spots on mesocorium, mesocorial disc evenly punctured, one distinct row of punctures parallels clavo-corial suture; clavus small, in two thirds covered by scutellum, bearing three short rows of punctures; exocorium evenly punctured; membrane pale brown, veins dark brown, apex of membrane slightly surpassing the tip of abdomen.

Propleuron dark reddish brown, depression dull and coarsely sculptured; evaporatoria as in fig. 77.

Sternites dark reddish brown, densely evenly punctured.

Legs dark reddish brown, not specifically modified.

Paramere as in fig. 78.

Measurements (male only): body length 2.83; body width 1.57; head length 0.56; head width 0.71; pronotum length 0.75; pronotum width 1.50; scutellum length 1.20; scutellum width 0.91; antennal segments: 0.14 : 0.14 : 0.13 : 0.17 : 0.28.

#### TYPE MATERIAL EXAMINED

Lectotype male of *Sehirus orientalis* DISTANT (present designation): [BURMA]: Carin, Asciuii Ghecú, 1400-1500m, L. FEA III-IV.88; DISTANT Coll. 1911-383; Type; *orientalis* DIST.; *Sehirus orientalis* DIST. (type); Brit. Mus. Type No. Hem. 360 (BMNH).

DISTRIBUTION. - Burma.

### Subfamily *Cydninae* BILLBERG

**DIAGNOSIS.** - The claval commissure absent, the posterior tibiae not swollen, the sternites III-VII with two trichobothria, and at best only the sternite III with the inner trichobothrium more anterior in position than the spiracle will separate this subfamily from all others in the *Cydnidae*.

**DESCRIPTION.** - Head from semicircular to subtriangular, margins entire without crenulations; paraclypei and sometimes also clypeus with setigerous punctures; eyes small to large, ocelli either present or absent; antennae 4- or 5-segmented; rostrum 4-segmented.

Pronotum broader than long; each lateral margin with setigerous punctures.

Scutellum either not longer than broad (*Cydnini*) or longer than broad (*Geotomini*).

Hemelytron with corium divided into clavus, meso- and exocorium; clavo-corial suture sometimes absent; membrane from normally developed to almost reduced; costal margins either with or without setigerous punctures; claval commissure absent.

Propleuron with distinct depression; apex of peritreme modified.

Sternites III-VII with two trichobothria arranged differently on each sternite - on VII in transverse row behind the spiracle, on VI to III successively the inner trichobothrium shifts forward until on III it lies anteriorly, mesoanteriorly or mesad to the spiracle.

Legs more or less modified; tarsi present on all legs, with 2nd segment subequal in diameter to the 1st or 3rd.

**TYPE OF SUBFAMILY.** - Genus *Cydnus* FABRICIUS, 1803.

**DISTRIBUTION.** - Representatives of the subfamily occur in all zoogeographical regions of the World.

#### Key to tribes of *Cydninae*

1. Scutellum short, usually not reaching a half length of hemelytra, broader than or as broad as long; peritreme extending laterally as elevated polished band (figs. 105, 123, 133, 168, 181, 187) . . . . . *Cydnini* (p. 49)
- Scutellum long, extending beyond a half length of hemelytra, usually longer than broad; peritreme not extending laterally as elevated polished band . . . . . *Geotomini* (p. 120)

### Tribe *Cydnini* BILLBERG

**DIAGNOSTIC CHARACTERS.** - Scutellum short, usually not reaching a half length of hemelytra, broader than long or as broad as long; peritreme extending laterally as polished band (sometimes recurved at the end), usually extending almost to the lateral margin of segment; penis with very slightly sclerified and unpigmented theca.

**TYPE OF TRIBE.** - Genus *Cydnus* FABRICIUS, 1803.

**DISTRIBUTION.** - Widely distributed in all Old World faunal regions.

REMARK. - The tribe contains eight genera distributed in the Oriental Region, namely *Centrostephus*, *Chilocoris* (with *Chilocoris* s.str., *Amnestoides* and *Statanus* as subgenera), *Cydnopeltus*, *Cydnus* (with *Cydnus* s.str. and *Orientocydnus* as subgenera), *Nishadana*, *Parachilocoris*, *Peltoxys*, and *Pullneya*.

#### Key to genera of Cydnini

1. Evaporative area on mesopleuron large, subquadrate, covering most of the segment, reaching lateral and posterior margins; polished part of peritreme very long, reaching or surpassing the lateral margin of metapleural evaporatorium and there forming a posteriorly curved rounded lobe (figs. 195, 123, 133, 187) ..... 2.
- Evaporative area on mesopleuron neither large nor subquadrate, covering only a small part of the segment; polished part of peritreme shorter and without posteriorly curved rounded lobe (figs. 168, 181, 205) ..... 4.
2. Each paraclypeus with a row of submarginal setigerous punctures bearing both pegs and hair-like setae (figs. 87, 103, 121, 131, 143, 150) ..... 3.
- Each paraclypeus with a row of submarginal setigerous punctures bearing only hair-like setae (figs. 185, 196) ..... *Parachilocoris* (p. 106)
3. Lateral margins of pronotum distinctly serrated (fig. 79, 97); paramere swollen in apical part ..... *Centrostephus* (p. 50)
- Lateral margins of pronotum not serrated; paramere not swollen in apical part ..... *Chilocoris* (p. 52)
4. Clypeus either with two pegs subapically or with two short hair-like setae at one third of its length from the apex (figs. 166, 177, 198, 200) ..... 5.
- Clypeus with neither hair-like setae nor pegs (figs. 178, 203) ..... 7.
5. Body length exceeding 5.0 mm; polished band of peritreme broad (fig. 168); clypeus with two short hair-like setae at one third of its length from the apex (figs. 166, 177) ..... 6.
- Body length not exceeding 5.0 mm; polished band of peritreme narrow; clypeus subapically with two pegs (figs. 198, 200) ..... *Peltoxys* (p. 115)
6. Anterior convexity of propleuron with numerous parallel grooves ... *Cydnopeltus* (p. 94)
- Anterior convexity of propleuron either smooth or with punctures, parallel grooves never present ..... *Cydnus* (p. 100)
7. Clypeus free, as long as paraclypei (fig. 203); margins of paraclypei semicircular (fig. 203); membranul suture almost straight (fig. 204) ..... *Pullneya* (p. 119)
- Paraclypei longer than clypeus and joined in front of it (fig. 178); each paraclypeus with triangularly projecting apex (fig. 178); membranul suture with distinct V-shaped insinuation (figs. 179, 180, 183) ..... *Nishadana* (p. 103)

#### Genus *Centrostephus* HORVÁTH

*Centrostephus* HORVÁTH, 1919: 262.

DIAGNOSIS. - Conspicuously serrated pronotal and costal margins mark this genus as distinct from the others within the tribe.

DESCRIPTION. - Head elongated; clypeus free, longer than paraclypei, subapically with two pegs; each paraclypeus with primary (hair-like setae) and secondary (submarginal pegs) type of vestiture; eyes protruding, each apically with a single hair-like seta; ocelli present; antennae 5-segmented, 2nd segment minute.

Pronotum broader than long, narrowed anteriorly; lateral margins distinctly serrated, and each with marginal and submarginal setigerous punctures; disc divided into two lobes by more or less impressed transverse postmedian row of punctures.

Scutellum triangular, wider than long, apex narrowed, disc punctured.

Corium divided into clavus, meso- and exocorium; costal margins distinctly serrated, and each with short hair-like setae; membranal suture slightly insinuated.

Evaporatoria on meso- and metapleuron large, subquadrate, occupying entire pleural area, similar to that of the genus *Chilocoris*; peritreme transverse, trough-like in basal part, apex elongated, its posteriorly curved rounded lobe almost reaching the posterior margin of metapleural evaporative area.

Anterior tibiae expanded, bearing strong spines on the outer margins; middle and posterior tibiae slender, armed in numerous spines and setae.

Sternites shining, laterally with short light hair-like setae.

Paramere swollen in the apical part.

TYPE OF GENUS. - *Chilocoris parumpunctatus* SIGNORET, 1884, by original designation.

### ***Centrostephus parumpunctatus* (SIGNORET)**

(figs. 79, 97)

*Chilocoris parumpunctatus* SIGNORET, 1884a: 520; ATKINSON, 1887: 58; LETHIERRY & SEVERIN, 1893: 76; DISTANT, 1902: 106.

*Centrostephus parumpunctatus*: HORVÁTH, 1919: 263.

DIAGNOSIS. - It is the only Oriental species of the genus.

DESCRIPTION. - Head brown or dark brown, impunctate except for setigerous punctures and an arched patch of punctures between eyes; clypeus broad, tapering apicad, subapically with two pegs; each paraclypeus with a row of 8-9 submarginal setigerous punctures (5-6 pegs and 3-4 hair-like setae); eyes brown or reddish brown, ocular index 2.65-3.43; ocelli of the same colour as eyes, interocellar index 3.0-3.7; antennae brown or dark brown; rostrum pale brown, reaching middle coxae.

Pronotum divided into two lobes by the transverse postmedian impressed row of large punctures (fig. 97); anterior lobe of the same colour as head and with a patch of punctures behind the latter, lateral parts with a few large deep punctures; posterior lobe sometimes more yellowish than the anterior, disc with irregularly scattered large punctures; lateral margins serrated (fig. 79), each with 7-11 crenulations bearing short hair-like setae, and submarginally with 3 setigerous punctures bearing long hair-like setae.

Scutellum of the same colour as the posterior lobe of pronotum, basally and laterally with darker distinct rows of punctures; disc with scattered punctures larger than those on pronotum, and bearing short hair-like bristles.

Corium of the same colour as scutellum, with a partial row of punctures between exo- and mesocorium; clavus with a few large punctures; mesocorium with two rows of dark punctures parallel clavo-corial suture, and several irregularly scattered over its apical half; all punctures smaller than those on scutellum, some bear short hair-like bristles; costal margins distinctly serrated with 5-7 crenulations bearing short hair-like setae (fig. 79); membrane usually browned, surpassing the tip of abdomen.

Propleuron smooth, brown or dark brown, depression with a few punctures.

Evaporative areas large; apex of peritreme with a long posteriorly curved lobe.

Abdominal sternites reddish brown or brown, laterally with numerous light hair-like setae.

Legs pale brown or brown, not specifically modified.

Measurements (male and female respectively): body length 2.40-2.71, 2.63-2.70; body width 1.18-1.25, 1.18-1.26; head length 0.41-0.49, 0.35-0.42; head width 0.54-0.56, 0.54-0.56; pronotum length 0.70-0.84, 0.74-0.81; pronotum width 1.15-1.24, 1.17-1.25; scutellum length 0.63-0.77, 0.66-0.78; scutellum width 0.69-0.80, 0.70-0.77; antennal segments: 0.10-0.14 : 0.05-0.07 : 0.25-0.28 : 0.23-0.27 : 0.32-0.35, 0.11-0.13 : 0.06-0.07 : 0.27-0.28 : 0.24-0.27 : 0.34-0.36.

MATERIAL EXAMINED (2 males, 4 females)

INDIA: [nde], 1 female, det. as *Chilocoris parumpunctatus* SIGN., Muséum Paris (MNHN).

PHILIPPINES: Philippines, Tagurano, 1000m, Mindanao, 1 male June 25.26.1977, M. SATO leg. (NSMT); Philippines, Mt. Polis, 1900m, Ifugao Prov., Luzon, 1 male 1 female June 4.5.1977, M. SATO leg. (NSMT); Philippines, Upper Barakatan, 1.100m, Apo Range, Mindanao Is., 1 female 6.VIII.1985, 1 female 7.VIII.1985, Y. NISHIKAWA (NSMT, JAL).

DISTRIBUTION. - India, Philippines.

### Genus *Chilocoris* MAYR

*Chilocoris* MAYR, 1864: 907.

*Amnestoides* SIGNORET, 1881b: VIII, syn. with *Chilocoris* by SIGNORET, 1884a: 517.

*Statanus* DISTANT, 1908: 430, syn. with *Chilocoris* by LIS, 1991b: 172.

*Macroporus* UHLER, 1876: 278, new synonym.

DIAGNOSIS. - The genus is best diagnosed by a set of the following characters: the evaporative area on the mesopleuron large, subquadrate, covering most of the segment and reaching its lateral and posterior margins; the polished part of the peritreme long, reaching or surpassing the lateral margin of the metapleural evaporative area and there forming a posteriorly curved rounded lobe; each paraclypeus with a row of submarginal setigerous punctures bearing both pegs and hair-like setae; lateral margins of pronotum not serrated.

DESCRIPTION. - Head spatulate, flattish; clypeus as long as or slightly either shorter or longer than paraclypei, subapically with two pegs; paraclypei with a submarginal row of both pegs and hair-like setae; eyes protruding, ocelli present; antennae with 2nd segment distinctly shorter than the 3rd.

Pronotum broader than long, slightly convex; anterior submarginal impressed line distinct from side to side; umbones either normally developed (sg. *Chilocoris* s.str.) or swollen (sg. *Amnestoides* and sg. *Statanus*); disc undivided into lobes by postmedian transverse impressed line (sg. *Chilocoris* s.str. and sg. *Amnestoides*), or with distinct postmedian uninterrupted transverse impressed line (sg. *Statanus*); each lateral margin with a submarginal row of setigerous punctures.

Scutellum broader than long, triangular, slightly narrowed at apical third, with basal and lateral rows of punctures; apex narrowly rounded, sometimes with the tip sharp.

Corium divided into clavus, meso- and exocorium; membranal suture straight or almost straight; costa without setigerous punctures, sometimes ventral margin with short shining hair-like bristles.

Evaporatorium on mesopleuron extensive, covering most of segment, reaching posterior and lateral margins; the polished part of peritreme long reaching or



surpassing the lateral margin of metapleural evaporative area and there forming a posteriorly curved rounded lobe.

Anterior tibiae moderately widened, outer lateral margin with numerous spines; middle and posterior tibiae cylindrical, armed in numerous spines.

TYPE OF GENUS. - *Chilocoris nitidus* MAYR, 1864, by monotypy; of *Amnestoides*, *Amnestoides ritzemai* SIGNORET, 1881, by monotypy; of *Statanus*, *Chilocoris assmuthi* BREDDIN, 1904 (= *Statanus membranaceus* DISTANT, 1908), by automatic fixation; of *Macroporus*, *Macroporus repetitus* UHLER, 1876, by monotypy.

REMARK. - At present the genus contains 35 Oriental species, among them 9 previously known and 26 new to the science. All these species can be divided into three groups which I choose to designate as subgenera, namely *Chilocoris* s.str., *Amnestoides* and *Statanus*. The species are grouped together within the certain subgenus on the basis of a form of pronotum and its disc, a head vestiture and a shape of male genitalia.

Further studies on other Old World members of the genus *Chilocoris* sensu lato may cause a necessity of giving the full generic status to its three subgenera, but at the present state of our knowledge I decide to treat them as the members of one genus.

I have studied numerous specimens of the New World species *Macroporus repetitus* UHLER, determined by FROESCHNER (1960a) and housed in different European museums. They are with no doubt congeneric with *Chilocoris nitidus* MAYR, the type-species of the genus *Chilocoris* MAYR, and therefore *Macroporus* UHLER is proposed here as a junior synonym of the latter. The proper name for the only American species of this genus is *Chilocoris repetitus* (UHLER) **n.comb.** Thus, *Chilocoris* is the second genus (after *Microporus* UHLER - see LIS, 1993b) having representatives in both Old and New World.

#### Key to subgenera of *Chilocoris*

1. Pronotal disc with distinct postmedian uninterrupted transverse impressed line (figs. 113, 129, 132, 137, 139, 141, 144, 151, 153) ..... ***Statanus*** (p. 77)
- Pronotal disc not as above, sometimes with a postmedian row of punctures (figs. 80, 104, 111, 114, 122, 128) ..... 2.
2. Umbones swollen, more or less concealing posterolateral margins of pronotum (fig. 80); paraclypei with pegs stouter than those in *Chilocoris* s.str.; paramere with small, sometimes indistinct hypophysis (figs. 81, 85, 90, 92) ..... ***Amnestoides*** (p. 53)
- Umbones not swollen, posterolateral margins of pronotum visible from upper-side view (fig. 122); paraclypei with pegs not as stout as in *Statanus*; paramere with large hypophysis (figs. 98, 106, 108, 112, 115, 120, 124, 126) ..... ***Chilocoris*** (p. 63)

#### Subgenus *Amnestoides* SIGNORET, new status

*Amnestoides* SIGNORET, 1881b: VIII.

DIAGNOSTIC CHARACTERS. - Head with a submarginal row of stout pegs; pronotal disc without postmedian transverse impressed line, but sometimes with postmedian row of punctures; anterior part of disc almost impunctate, the posterior with distinct punctures; umbones swollen, more or less concealing posterolateral margins of pronotum; paramere with small, sometimes indistinct hypophysis.

TYPE OF SUBGENUS. - *Amnestoides ritzemai* SIGNORET, 1881, by monotypy.

REMARKS. - The subgenus contains 9 Oriental species, among them two previously known (*adelphus*, *ritzemai*), and seven new to the science (*costatus*, *franzi*, *heissi*, *indicus*, *pauli*, *similis*, *sulawesicus*). All these species (except *costatus*) are morphologically very similar and therefore sometimes difficult to separate correctly, especially female specimens. The most reliable distinguishing character is a shape of the opening of male genital capsule.

Key to species of sg. *Amnestoides*

1. Costal margins serrated (fig. 84) ..... ***costatus*** (p. 55)
- Costal margins not serrated (fig. 80) ..... 2.
2. Scutellum densely punctured, its disc with 19-38 scattered punctures ..... 3.
- Scutellum weakly punctured, its disc with 9-16 scattered punctures ..... 6.
3. Ocular index about 2.85; each paraclypeus with additional peg between clypeus and eye (fig. 87); opening of male genital capsule as in fig. 89 ..... ***indicus*** (p. 58)
- Ocular index not exceeding 2.80 (2.12-2.72); each paraclypeus without additional peg between clypeus and eye; opening of male genital capsule not as above ..... 4.
4. Opening of male genital capsule as in fig. 86 ..... ***franzi*** (p. 56)
- Opening of male genital capsule not as above ..... 5.
5. Female body length 2.93-3.40; opening of male genital capsule as in fig. 82; proctiger narrow (fig. 83) ..... ***adelphus*** (p. 54)
- Female body length 2.30-2.93; opening of male genital capsule as in fig. 93; proctiger broad (fig. 94) ..... ***ritzemai*** (p. 60)
6. Each lateral margin of pronotum with 3 submarginal setigerous punctures; opening of male genital capsule as in fig. 91 ..... ***pauli*** (p. 59)
- Each lateral margin of pronotum with 4-5 submarginal setigerous punctures; opening of male genital capsule not as above ..... 7.
7. Ocular index about 2.19-2.57; opening of male genital capsule as in fig. 96 ..... ***sulawesicus*** (p. 62)
- Ocular index about 2.58-2.87; opening of male genital capsule not as above ..... 8.
8. Each paraclypeus with additional peg between clypeus and eye (fig. 87); opening of male genital capsule as in fig. 88 ..... ***heissi*** (p. 57)
- Each paraclypeus without additional peg between clypeus and eye; opening of male genital capsule as in fig. 95 ..... ***similis*** (p. 61)

***Chilocoris (Amnestoides) adelphus* HORVÁTH, new combination**  
(figs. 80-83)

*Chilocoris adelphus* HORVÁTH, 1919: 260; WAGNER, 1963: 93 & 94; Lis, 1991e: 300.

DIAGNOSIS. - The species is best diagnosed by the densely punctured scutellum (21-26 scattered punctures on the disc), the ocular index from 2.12 to 2.42, the body length ranging from 2.68 to 3.42 (2.68-3.42 in male, 2.93-3.40 in female), and by the shape of male genital capsule.

DESCRIPTION. - Head yellowish brown or brown, slightly striated, and with a few punctures between eyes; clypeus as long as or slightly shorter than paraclypei, and subapically with two pegs; each paraclypeus with a row of 9-10 submarginal setigerous punctures (3 hair-like setae and 6-7 pegs); eyes reddish brown or blackish brown, ocular index 2.12-2.42; ocelli yellowish brown or reddish brown, interocellar index 8.0-12.0; antennae yellow or yellowish brown; rostrum yellowish brown, reaching middle coxae.

Pronotum of the same colour as head, sometimes posterior part more yellowish; anterior lobe subapically without or with a group of 1-3 punctures; posterior lobe with distinct transverse band of punctures (fig. 80); each lateral margin with a row of 4-7 submarginal setigerous punctures.

Scutellum either of the same colour as the anterior half of pronotum or somewhat darker, disc with 21-38 irregularly scattered dark punctures; apex almost impunctate.

Corium pale yellow or yellowish brown, more translucent than both pronotum and scutellum; clavus with one or two rows of punctures on basal half, mesocorium with two rows of punctures paralleling clavo-corial suture (among them one accompanied by impressed line), mesocorial disc with scattered pale brown or almost colourless punctures in apical half; membrane semihyaline, distinctly surpassing the apex of abdomen.

Propleuron yellowish brown or brown, polished and impunctate except for a few punctures close to coxae.

Legs yellowish brown or pale brown, not specifically modified.

Sternites brown or yellowish brown, polished, impunctate, laterally with numerous hairs.

Paramere as in fig. 81, opening of genital capsule as in fig. 82, proctiger narrow (fig. 83).

Measurements (male and female respectively): body length 2.68-3.42, 2.93-3.40; body width 1.56-2.01, 1.76-1.88; head length 0.42-0.50, 0.43-0.49; head width 0.67-0.77, 0.76-0.77; pronotum length 0.80-1.07, 0.90-0.96; pronotum width 1.44-1.80, 1.62-1.78; scutellum length 0.73-0.81, 0.85-0.88; scutellum width 0.90-1.12, 1.12-1.15; antennal segments 0.14-0.17 : 0.06-0.07 : 0.20-0.24 : 0.20-0.22 : 0.28-0.29, 0.14-0.17 : 0.06-0.07 : 0.23-0.25 : 0.21-0.24 : 0.28-0.29.

#### TYPE MATERIAL EXAMINED

Lectotype male of *Chilocoris adelphus* HORVÁTH (designated by LIS, 1991e: 300): [INDONESIA]: S. Celebes, Bua-Kraeng, 5000', Febr. 1896, H. FRUHSTORFER; *adelphus* H., det. HORVÁTH; Lectotype, *Chilocoris adelphus* HORV., labelled by R. C. FROESCHNER 59 (HNHM).

#### OTHER MATERIAL EXAMINED (6 males, 2 females)

INDONESIA: Java, Bodjonegoro, 1 male, PIEPERS, Museum Leiden, det. as *Chilocoris ritsemae* SIGN. (RNH); Timor, 2 females 4 males 1920, DOUGLAS, coll. Dr. D. MAC GILLAVRY (ZMA, JAL); Indonesia, Oesusu, ca 500m alt., Timor Is., 1 male 20.II.1989, K. FUJITA leg. (NSMT).

DISTRIBUTION. - Java, Sulawesi, Timor.

### ***Chilocoris (Amnestoides) costatus*, new species**

(figs. 84-85)

DIAGNOSIS. - The serrated costal margin of the corium separates this species from any other within the subgenus.

DESCRIPTION. - Head dark castaneous, lateral parts brown; dorsal side alutaceous

with several punctures between eyes; clypeus slightly longer than paraclypei, subapically with two pegs; each paraclypeus with a row of 9 submarginal setigerous punctures bearing 3 hair-like setae and 6 pegs; eyes dark brown, ocular index 2.78; ocelli yellowish brown, interocellar index 7.0; antennae yellowish brown; rostrum yellowish brown, reaching anterior margin of middle coxae.

Pronotum intensely polished; anterior half dark castaneous, lateral margins and posterior half castaneous; calli large, disc punctured around the latter, laterally and in the posterior half, umbones impunctate; each lateral margin with 4 submarginal setigerous punctures; each lateral carina distinctly narrowed in the posterior half (fig. 84).

Scutellum of the same colour as anterior lobe of pronotum, disc with 25 scattered punctures slightly larger than those on pronotum; apex impunctate at the tip.

Corium of the same colour as posterior half of pronotum; clavus with two short rows of punctures; mesocorium with two rows of punctures parallel to clavo-corial suture, mesocorial disc with several scattered punctures in apical part close to scutellum; exocorium with one row of punctures close to mesocorium, and with a row of 5 setigerous punctures close to costal margin; the latter without setigerous punctures, basally distinctly serrated, each crenulation bears short hair-like bristle (fig. 84); membrane browned, longer and broader than abdomen.

Propleuron dark castaneous, anterior convexity almost black; evaporative areas of meso- and metapleuron almost black.

Abdomen dark castaneous; sternites smooth with single punctures along sutures; lateral margins with several hairs.

Legs reddish brown, not specifically modified.

Paramere as in fig. 85.

Measurements (male only): body length 2.93; body width 1.44; head length 0.42; head width 0.60; pronotum length 0.84; pronotum width 1.36; scutellum length 0.80; scutellum width 0.84; antennal segments: 0.15 : 0.06 : 0.22 : 0.21 : 0.32.

#### TYPE MATERIAL EXAMINED

Holotype male: [MALAYSIA]: Sabah: Crocker Range, Keningau-Kimanis rd (km 25), alt. m 1300, 18-23/xi/1987, KRIKKEN & ROMBAUT, multistr. evergr. forest, 8 human excr. traps, RMNH\sa45 (RNH).

DISTRIBUTION. - Borneo.

BIOLOGICAL DATA. - The holotype has been collected from "human excr. traps" in a tropical evergreen forest.

REMARK. - In a general appearance the new species resembles members of the genus *Centrostephus*. Nevertheless, the shape of pronotum, and as the most important, not swollen apical part of paramere show it belongs to the genus *Chilocoris*.

### *Chilocoris (Amnestoides) franzi*, new species

(fig. 86)

DIAGNOSIS. - The best characters distinguishing this species from other members of the subgenus are, as follows: the scutellum densely punctured (20-26 scattered punctures on disc); the ocular index about 2.5 (2.45-2.49); the shape of the opening of male genital capsule as in fig. 86. This new species is closely related to *Ch. (A.) heissi* and *Ch. (A.) similis*, but differs from both in denser puncturation of

the scutellum, and the different shape of male genital capsule. Besides, it differs from *Ch. (A.) heissi* in the absence of additional pair of pegs on the paraclypei. Since the new species is described on the basis of a single specimen, the most reliable distinguishing character is the shape of the opening of male genital capsule.

**DESCRIPTION.** - Head brown; clypeus as long as paraclypei, subapically with two pegs; each paraclypeus wrinkled, and submarginally with a row of 6 pegs and 3 hair-like setae; eyes blackish brown, ocular index 2.45-2.49; ocelli reddish brown, interocellar index 8.0-12.0; antennae pale brown; rostrum pale brown, reaching middle of mesosternum.

Pronotum of the same colour as head; anterior lobe medially with 2 punctures behind head, laterally with 1-2 punctures; posterior lobe with broad band of dark punctures, among them several forming postmedian transverse (medially interrupted) row; each lateral margin with 4 submarginal setigerous punctures bearing hair-like setae.

Scutellum of the same colour as pronotum, disc with 20-26 scattered dark punctures.

Corium more yellowish than pronotum and scutellum, almost translucent; clavus with distinct rows of punctures; mesocorium with two rows of punctures paralleling clavo-corial suture, and with scattered punctures in the apical part; exocorium with a row of punctures close to mesocorium; membrane hyaline, surpassing the tip of abdomen.

Propleuron yellowish brown, impunctate. Sternites brown, laterally with short hairs. Legs yellowish brown, with dark brown spines, not specifically modified.

Opening of the male genital capsule as in fig. 86.

Measurements (male only): body length 2.49-2.90; body width 1.38-1.58; head length 0.45-0.54; head width 0.60-0.68; pronotum length 0.77-1.09; pronotum width 1.33-1.56; scutellum length 0.67-0.78; scutellum width 0.83-0.98; antennal segments: 0.12-0.13 : 0.06-0.07 : 0.19-0.21 : 0.20 : 5th missing.

**TYPE MATERIAL EXAMINED**

Holotype male: [NEPAL]: Barahbise geg., Ting-Sang-La, Nepal, lg. H. FRANZ, ex collection E. HEISS, Innsbruck (JAL).

Paratype male: [INDIA]: India, Mysore, Bangalore, Karnataka, 916m, April 1, 1977, K.D. GHORPADE, ex: M.V. light trap (AMNH).

**DISTRIBUTION.** - Nepal, India.

***Chilocoris (Amnestoides) heissi*, new species**

(figs. 87-88)

**DIAGNOSIS.** - The species is best diagnosed by a set of the following characters: the scutellum weakly punctured (11-14 scattered punctures); each lateral margin of the pronotum with 4 submarginal setigerous punctures; the ocular index ranging from 2.58 to 2.87; each paraclypeus with additional peg between the clypeus and the eye. The species is morphologically similar to *Ch. (A.) similis*, but differs from the latter in the presence of additional peg on each paraclypeus (additional peg is absent in *Ch. (A.) similis*), and in the shape of the opening of male genital capsule (figs. 88 & 95).

**DESCRIPTION.** - Head light brown or brown, slightly grooved; clypeus as long as or

slightly longer than paraclypei, subapically with two pegs; each paraclypeus with a row of 9 submarginal setigerous punctures bearing 3 hair-like setae and 6 pegs, additional distinct peg is present between clypeus and eye on either side (fig. 87); eyes brown or reddish brown, ocular index 2.58-2.87; ocelli reddish brown, interocellar index 6.0-8.0; antennae brown or yellowish brown; rostrum light brown or yellowish brown, reaching middle of mesosternum.

Pronotum of the same colour as head; anterior lobe either impunctate or with 1-2 punctures behind head; posterior lobe with several scattered punctures, and several forming a transverse row of punctures; each lateral margin with a row of 4 submarginal setigerous punctures.

Scutellum of the same colour as pronotum, disc with 11-14 punctures of the same size as those on pronotum; apex almost impunctate.

Corium yellowish brown or milky yellow, distinctly lighter than pronotum and scutellum; in male specimens corium almost translucent; clavus with several punctures; mesocorium with two rows of punctures, and several scattered punctures in distal part; exocorium with 1 row of punctures; all punctures smaller than those on scutellum and pronotum; membrane hyaline, longer and broader than abdomen.

Propleuron brown or yellowish brown, depression impunctate or with a few almost indistinct punctures.

Abdomen brown; sternites smooth, sometimes slightly wrinkled; lateral margins with hairs.

Legs brown or yellowish brown, not specifically modified, spines brown or reddish brown.

Opening of male genital capsule as in fig. 88.

Measurements (male and female respectively): body length 2.41-2.44, 2.46; body width 1.26-1.30, 1.30; head length 0.40-0.41, 0.34; head width 0.54-0.57, 0.56; pronotum length 0.69-0.78, 0.73; pronotum width 1.27-1.30, 1.26; scutellum length 0.61-0.63, 0.63; scutellum width 0.76-0.78, 0.77; antennal segments: 0.12-0.13 : 0.06-0.07 : 0.21-0.23 : 0.19-0.21 : 0.28-0.29, 0.10 : 0.06 : 0.24 : 0.18 : 0.28.

#### TYPE MATERIAL EXAMINED

Holotype male: [NEPAL]: Barahbise geg., Ting-Sang-La, Nepal, lg. H. FRANZ, ex collection E. HEISS, Innsbruck (JAL).

Paratypes: 1 male and 1 female: Barahbise geg., Ting-Sang-La, Nepal, lg. H. FRANZ, ex collection E. HEISS, Innsbruck [NEPAL]: (EHC, JAL).

DISTRIBUTION. - Nepal.

ETYMOLOGY. - The species is dedicated to Dipl. ing. E. HEISS (Austria), who has kindly made his collection of the Oriental *Cydnidae* available for my studies.

### ***Chilocoris (Amnestoides) indicus*, new species**

(fig. 89)

DIAGNOSIS. - The species can be recognized within the subgenus by the densely punctured scutellum (20 scattered punctures), the ocular index reaching 2.85, and each paraclypeus bearing additional peg between the clypeus and the eye. It differs from all other members of the subgenus also in the shape of the opening of male genital capsule.

DESCRIPTION. - Head yellowish brown; dorsally smooth with a few colourless



punctures between eyes; clypeus as long as paraclypei, subapically with two pegs; each paraclypeus with a row of 9 submarginal setigerous punctures bearing 3 hair-like setae and 6 pegs, additional peg is present between clypeus and eye (see fig. 87); eyes blackish brown, ocular index 2.85; ocelli reddish brown, interocellar index 5.0; antennae yellowish brown; rostrum yellowish brown, almost reaching middle of mesosternum.

Pronotum polished; anterior lobe yellowish brown, impunctate except for a few punctures behind head; posterior lobe dark brown with a transverse band of punctures not reaching posterior margin; each lateral margin with a row of 4 submarginal setigerous punctures.

Scutellum of the same colour as the posterior lobe of pronotum, disc with 20 scattered punctures; apex almost impunctate.

Corium milky yellow, distinctly lighter than pronotum and scutellum, mesocorium somewhat translucent; clavus with one row of punctures; mesocorium with two rows of punctures paralleling clavo-corial suture, and several punctures in the distal part, exocorium with 1 row of punctures; all punctures smaller than those on scutellum and pronotum; membrane hyaline, surpassing the tip of abdomen.

Propleuron brown, depression with a row of punctures.

Abdomen brown, sternites smooth, laterally with numerous punctures bearing hairs. Legs yellow, not specifically modified, spines brown or reddish brown.

Opening of male genital capsule as in fig. 89.

Measurements (male only): body length 3.17; body width 1.70; head length 0.36; head width 0.68; pronotum length 1.06; pronotum width 1.64; scutellum length 0.77; scutellum width 1.05; antennal segments: 0.14 : 0.05 : 0.29 : 0.28 : 0.35.

#### TYPE MATERIAL EXAMINED

Holotype male: [INDIA]: India or., Matheran, 800m, ex coll. R. HOLYNSKI (JAL).

DISTRIBUTION. - India.

### ***Chilocoris (Amnestoides) pauli*, new species**

(figs. 90-91)

DIAGNOSIS. - The new species is one of the smallest representatives of *Amnestoides* (body length 1.93-2.21). It differs from other members of the subgenus in having only 3 submarginal setigerous punctures on each lateral margin of pronotum (4-7 submarginal setigerous punctures in remaining species). A shape of the opening of male genital capsule (fig. 91) is also a good diagnostic character.

DESCRIPTION. - Head yellowish brown, light brown or brown; dorsally smooth, sometimes with several punctures between eyes; clypeus as long as or slightly longer than paraclypei, subapically with two pegs; each paraclypeus with a row of 9 submarginal setigerous punctures bearing 3 hair-like setae and 6 pegs; eyes brown, reddish brown or brownish black, ocular index 2.11-2.43 (male 2.11-2.43, female 2.22-2.43); ocelli reddish brown, interocellar index 5.0-7.0; antennae brown or yellowish brown; rostrum light brown, yellowish brown or brown, reaching middle coxae.

Pronotum of the same colour as head; disc with transverse postmedian row of punctures, anterior lobe smooth, sometimes with 1-3 punctures behind head; posterior lobe with several punctures, scattered usually close to a postmedian row or parallel to it; each lateral margin with 3 submarginal setigerous punctures.

Scutellum of the same colour as pronotum, disc with 10-14 punctures of the same size as those on pronotum; apex almost impunctate.

Corium milky brown or milky yellow, distinctly paler than pronotum and scutellum, sometimes mesocorium almost translucent; clavus with several punctures, mesocorium with two rows of punctures paralleling clavo-corial suture, and distally with several punctures; exocorium with 1 row of punctures; all punctures smaller than those on scutellum and pronotum; membrane hyaline, sometimes slightly browned, broader than abdomen and surpassing its tip.

Propleuron smooth, depression without or with a few almost indistinct punctures; evaporatoria typical of the genus.

Abdomen yellow or yellowish brown; sternites smooth, sometimes with scattered single punctures; lateral margins with numerous punctures bearing hairs.

Legs yellow with brown or reddish brown spines, not specifically modified.

Opening of male genital capsule as in fig. 91; paramere as in fig. 90.

Measurements (male and female respectively): body length 1.93-2.00, 2.02-2.21; body width 1.01-1.05, 1.12-1.20; head length 0.34-0.35, 0.34-0.38; head width 0.50-0.52, 0.50-0.57; pronotum length 0.61-0.64, 0.66-0.77; pronotum width 1.00-1.04, 1.08-1.15; scutellum length 0.55-0.56, 0.62-0.70; scutellum width 0.63-0.69, 0.66-0.71; antennal segments: 0.12-0.13 : 0.05-0.06 : 0.18-0.24 : 0.19-0.28 : 0.24-0.32, 0.10-0.13 : 0.04-0.06 : 0.17-0.21 : 0.15-0.20 : 0.25-0.27.

#### TYPE MATERIAL EXAMINED

Holotype male: [MALAYSIA]: Sarawak: 4th Division, Gn. Mulu NP., nr. Base Camp, 50-100m., at light, P.M. HAMMOND & J.E. MARSHALL, V-VIII.1978, B.M. 1978-49 (BMNH).

Paratypes: 1 female: [MALAYSIA]: the same data as the holotype (BMNH); 1 female: [MALAYSIA]: Sabah: 200ft, R. Karamuak, 7m SSE. Telupid, 1-7.IX.1977, M.E. BACCHUS, B.M. 1978-48 (BMNH); 4 females 1 male: [MALAYSIA]: Sarawak Gunong Mulu Nat. Park, Base Camp. P.M. HAMMOND & J.E. MARSHALL, V-VIII.1978, B.M. 1978-49 (BMNH, JAL); 1 male: [MALAYSIA]: Malaysia, Johore, Kahang, 26.xi.1961, Light trap, C.H. FERNANDO (JAL).

DISTRIBUTION. - Malaya, Borneo (Sarawak).

BIOLOGICAL DATA. - Almost all type specimens have been collected at light.

REMARK. - The species is dedicated to my son Paul.

### ***Chilocoris (Amnestoides) ritzemai* (SIGNORET), emendation** (figs. 92-94)

*Amnestoides Ritzemae* SIGNORET, 1881b: VIII.

*Chilocoris Ritzemae*: SIGNORET, 1884a: 519; HORVÁTH, 1919: 260.

*Chilocoris Ritzemae* [sic!]: LETHIERRY & SEVERIN, 1893: 76.

*Chilocoris ritzemae*: LIS, 1991b: 172.

DIAGNOSIS. - The species is best characterized by a set of the following features: the scutellum densely punctured (21-26 scattered punctures on disc); the ocular index ranging from 2.30 to 2.72; the female body length from 2.93 to 3.40. Nevertheless, the shape of male genital structures is the best diagnostic character.

DESCRIPTION. - Head wrinkled, pale brown or brown; clypeus as long as paraclypei, subapically with two pegs; each paraclypeus submarginally with a row of 6 pegs and 3-4 hair-like setae; eyes dark brown or reddish brown, ocular index 2.30-2.72; ocelli orange, reddish brown or yellowish brown, interocellar index 6.0-9.0; antennae yellowish brown; rostrum yellowish brown, reaching or slightly surpassing fore coxae.

Pronotum brown or yellowish brown, usually posterior part more yellowish than the anterior; disc with postmedian transverse band of numerous brown punctures, sometimes also with several punctures behind head; each lateral margin with a row of 4-6 submarginal setigerous punctures.

Scutellum of the same colour as head, disc with 19-34 punctures.

Corium pale yellowish brown or pale brown, lighter than pronotum and scutellum, sometimes almost translucent; clavus with two rows of punctures; mesocorium with two rows of punctures paralleling corio-claval suture, and scattered punctures in distal part; exocorium with a row of punctures close to mesocorium and several punctures in distal part; membrane hyaline, sometimes pale brown, broader and longer than abdomen.

Propleuron yellowish brown or brown, depression with a few punctures close to coxae.

Sternites smooth, yellowish brown or brown, sometimes medially darker; lateral parts with hairs.

Legs yellowish brown, not specifically modified, spines dark brown.

Male genital structures as in figs. 92-94.

Measurements (male and female respectively): body length 2.31-2.93, 2.30-2.93; body width 1.21-1.58, 1.24-1.72; head length 0.29-0.42, 0.42-0.55; head width 0.58-0.70, 0.58-0.73; pronotum length 0.78-0.98, 0.66-0.90; pronotum width 1.15-1.55, 1.19-1.54; scutellum length 0.57-0.76, 0.61-0.78; scutellum width 0.67-0.96, 0.75-0.98; antennal segments: 0.10-0.14 : 0.04-0.07 : 0.18-0.22 : 0.18-0.20 : 0.21-0.26, 0.12-0.15 : 0.05-0.07 : 0.18-0.20 : 0.17-0.20 : 0.22-0.25.

#### TYPE MATERIAL EXAMINED

Lectotype male of *Amnestoides ritzemai* SIGNORET (designated by LIS, 1991b: 172): [INDONESIA]: Java or., Ardjoeno, HEKMEYER; No. 74; cotypus; *Chilocoris Ritzemae* SIGNORET; Museum Leiden, *Chilocoris ritsemae* SIGN., Lectotype 1988, det. J.A. LIS; *Amnestoides ritzemae* SIGN. (RNH).

Paralectotypes: 2 males: [INDONESIA]: the same data as the lectotype, but different Museum numbers (75 and 76 respectively) (RNH).

#### OTHER MATERIAL EXAMINED (26 males, 6 females)

INDONESIA: Java, 1 male, coll. SIGNORET, det. as *Ritzemai*, by SIGNORET, Type, labelled by FROESCHNER, coll. Nat.-Mus. Wien (NhMW); Batavia, BIRO 1898, 1 female 1 male, det. as *Ritzemae* S. by HORVÁTH (HNHM); Batavia, 3 males 1 female VII-1947, C.V. NIDEK (ZMA, JAL); Java 1916, Dampit, Soember Pakel, 29 females 19 males, MAC GILLAVRY, coll. Dr. D. MAC GILLAVRY (ZMA, JAL); Java, Preanger, N.O.I. Bandoeng, 1 female 15.IV.1938, 1 female 29.III.1938, Coll. F.C. DRESCHER, Museum Leiden, det. as det. as *Chilocoris ritzemae* (RNH); Samarang, Java, 1 male Mrt. 1910, E. JACOBSON, Museum Leiden, det. as *Chilocoris ritsemae* SIGN. (RNH); Java, 1 male 1930, Museum Leiden, J. SONNEVELDT, Moester Cornelis, Museum Leiden, det. as *Chilocoris ritsemae* SIGN. (RNH); Oost Java, Banjoewangi, 1 female 26-II-1948, F.W. RAPPAARD, Museum Leiden, det. as *Chilocoris ritsemae* SIGN. (RNH); Sumatra, Fort de Kock, 920M, 1 female 1924, leg. E. JACOBSON, Museum Leiden, det. as *Chilocoris ritsemae* SIGN. (RNH).

DISTRIBUTION. - Java, Sumatra.

REMARK. - SIGNORET (1881b) described this species under the specific name "*Ritzemae*", and wrote nothing about its etymology. In the subsequent paper (SIGNORET, 1884a) he explained that this species was dedicated to Mr. RITZEMA; therefore the specific name "*ritzemae*" should be emended to "*ritzemai*", what was herein done. The specimen labelled "Type" by R.C. FROESCHNER, and preserved in NhMW does not belong to the original syntype series.

### *Chilocoris (Amnestoides) similis*, new species

(fig. 95)

DIAGNOSIS. - The best characters which distinguish this species from other

members of the subgenus are, as follows: the scutellum weakly punctured (13 scattered punctures on disc); each lateral margin of pronotum with 4 submarginal setigerous punctures; the ocular index about 2.75; the head without additional peg between the clypeus and the eye. Since this species is known only from the holotype specimen, a shape of the opening of male genital capsule appears to be the most reliable character for its separation from the other species of the subgenus.

**DESCRIPTION.** - Head brown, dorsally slightly striated and with a few large punctures between eyes; clypeus slightly longer than paraclypei, subapically with two pegs; each paraclypeus submarginally with a row of 6 pegs and 3 hair-like setae; eyes dark brown, ocular index 2.75; ocelli reddish brown, interocellar index 6.0; antennae pale brown; rostrum yellowish brown, reaching middle coxae.

Pronotum more yellowish than head; disc with transverse postmedian narrow band of dark punctures; anterior lobe impunctate (with exception of 3 anteromedian punctures); posterior margins and umbones impunctate; each lateral margin with 4 submarginal setigerous punctures.

Scutellum of the same colour as head; disc with 13 irregularly scattered punctures of the same size as those on pronotum; apex almost impunctate.

Corium more yellowish than pronotum and scutellum; clavus with a row of punctures; mesocorium with a few punctures in apical part, and two rows of punctures paralleling clavo-corial suture; exocorium with one row of punctures; membrane hyaline, slightly browned, surpassing the tip of abdomen.

Propleuron pale brown, depression impunctate except for a row of punctures near coxae.

Sternites brown, smooth and shining, laterally with hairs.

Legs yellowish brown, not specifically modified.

Opening of male genital capsule as in fig. 95.

Measurements (male only): body length 2.56; body width 1.37; head length 0.41; head width 0.55; pronotum length 0.77; pronotum width 1.34; scutellum length 0.70; scutellum width 0.81; antennal segments: 0.13 : 0.08 : 0.20 : 0.21 : 0.27.

**TYPE MATERIAL EXAMINED**

Holotype male: [NEPAL]: Barahbise geg., Ting-Sang-La, Nepal, lg. H. FRANZ, ex collection E. HEISS, Innsbruck (JAL).

**DISTRIBUTION.** - Nepal.

***Chilocoris (Amnestoides) sulawesicus*, new species**

(fig. 96)

**DIAGNOSIS.** - The species can be recognized within the subgenus by the following characters: the scutellum weakly punctured (disc with 9-16 scattered punctures); each lateral margin of pronotum with 4-5 submarginal setigerous punctures; the ocular index ranging from 2.19 to 2.57. Additionally, it differs from other members of the subgenus in a shape of the male genital capsule.

**DESCRIPTION.** - Head yellowish brown, light brown or brown; dorsally smooth, but sometimes with a few punctures between eyes; clypeus as long as or slightly longer than paraclypei, subapically with two pegs; each paraclypeus with a row of 9 submarginal setigerous punctures bearing 3 hair-like setae and 6 pegs; eyes brown, reddish brown or brownish black, ocular index 2.19-2.57 (male 2.19-2.50,

female 2.25-2.57); ocelli yellowish brown or reddish brown, interocellar index 4.0-7.0; antennae brown or yellowish brown; rostrum pale brown or yellowish brown, surpassing middle of mesosternum.

Pronotum of the same colour as head; disc with postmedian transverse row of punctures, and several punctures scattered posteriorly; anterior lobe impunctate, sometimes with 1-3 punctures behind head; each lateral margin with a row of 4-5 submarginal setigerous punctures.

Scutellum of the same colour as pronotum, disc with 9-16 irregularly scattered punctures of the same size as those on pronotum; apex usually impunctate, sometimes with a few tiny punctures.

Corium milky brown or milky yellow, distinctly lighter than pronotum and scutellum, sometimes entirely translucent; clavus with two short rows of punctures; mesocorium almost impunctate except for two rows of punctures paralleling clavo-corial suture and a few punctures in the apical part; exocorium with 1 short row of punctures; all punctures slightly smaller than those on scutellum and pronotum; membrane hyaline or semihyaline, sometimes slightly browned, longer and broader than abdomen.

Propleuron yellowish brown or brown, smooth; depression with a few punctures close to coxae.

Abdomen pale brown or brown; sternites with sparsely scattered punctures bearing hairs, especially numerous in lateral parts.

Legs not specifically modified, pale brown with brown or reddish brown spines, .

Opening of male genital capsule as in fig. 96.

Measurements (male and female respectively): body length 2.03-2.71, 1.93-2.59; body width 1.08-1.39, 1.00-1.29; head length 0.31-0.33, 0.31-0.32; head width 0.52-0.63, 0.46-0.60; pronotum length 0.68-0.91, 0.56-0.80; pronotum width 1.08-1.39, 0.94-1.29; scutellum length 0.52-0.68, 0.53-0.70; scutellum width 0.67-0.85, 0.60-0.80; antennal segments: 0.10-0.14 : 0.05-0.06 : 0.17-0.24 : 0.21-0.22 : 0.28-0.31, 0.12-0.14 : 0.05-0.06 : 0.15-0.21 : 0.15-0.19 : 0.25-0.29.

#### TYPE MATERIAL EXAMINED

Holotype male: [INDONESIA]: Sulawesi Tengah, Solato R., Taronggo, 1.45°S-121.40°E, 27-30.iii.1980, Forest floor litter, Lowland rain forest, M.J.D. BRENDLE, B.M. 1980-280 (BMNH).

Paratypes: 10 males 14 females: [INDONESIA]: the same data as the holotype (BMNH, JAL); 1 male 2 females 1 larva: [INDONESIA]: Indonesia, Sulawesi Utara, Dumoga-Bone N.P., March 1985, rotting fruit on ground, Plot A, ca 200m, Lowland forest, R. Ent. Soc. Lond., Project WALLACE, B.M. 1985-10 (BMNH, JAL); 1 female: [MALAYSIA]: Sabah, 200ft, R. Karamuak, 7m SSE. Telupid, 1-7.ix.1977 (JAL).

DISTRIBUTION. - Sulawesi, North Borneo.

BIOLOGICAL DATA. - 26 specimens of this species have been collected from a floor litter of the lowland rain forest; 4 individuals have been taken from a rotting fruit on ground (the specimens probably have been sucking the fruit sap).

### Subgenus *Chilocoris* s.str.

DIAGNOSTIC CHARACTERS. - Head submarginally with a row of pegs, not as stout as those of the subgenus *Amnestoides*; pronotal disc without postmedian transverse impressed line, posteriorly with numerous punctures, sometimes forming a transverse row; umbones not swollen, and not concealing posterolateral margins of pronotum; paramere with long apical process.

TYPE OF SUBGENUS. - *Chilocoris nitidus* MAYR, 1864.



REMARK. - The subgenus contains twelve Oriental species - two previously known (*minor* and *nitidus*), and ten new to the science (*birmanus*, *brunneus*, *longicephalus*, *martensi*, *montanus*, *muticus*, *nepalensis*, *nitidulus*, *philippinensis*, *thaicus*).

Key to species of *Chilocoris* s.str.

1. Pronotal disc with distinct postmedian transverse, usually medially interrupted, row of punctures (figs. 111, 114, 128) ..... 2.
- Pronotal disc without postmedian transverse row of punctures, all punctures scattered irregularly (figs. 104, 122) ..... 5.
2. Posterior lobe of pronotal disc almost impunctate, sometimes only with a few punctures (fig. 111); head smooth and impunctate, sometimes with 1-2 punctures between eyes; body length about 3 mm (2.81-2.88); paramere as in fig. 112. .... *montanus* (p. 69)
- Posterior lobe of pronotal disc distinctly punctured (figs. 114, 128); head punctured, sometimes also wrinkled; body length distinctly exceeding 3 mm (3.73-4.27); paramere not as above ..... 3.
3. Lateral margins of pronotum not broadened, each with 4-5 submarginal setigerous punctures (fig. 128); 3rd antennal segment about 3.7 times longer than the 2nd ..... *thaicus* (p. 76)
- Lateral margins of pronotum broadened particularly in anterior two thirds, each with 3 submarginal setigerous punctures (fig. 114); 3rd antennal segment about 2.5-2.8 times longer than the 2nd ..... 4.
4. Paramere and opening of genital capsule as in figs. 126 & 127; punctures on pronotum and scutellum distinctly larger than those scattered in the apical part of mesocorium ... *philippinensis* (p. 75)
- Paramere and opening of genital capsule as in figs. 115 & 116; punctures on pronotum and scutellum almost of the same size as those scattered in the apical part of mesocorium ..... *muticus* (p. 70)
5. Anterior part of head long (fig. 103), almost as long as the remaining part; body length about 6 mm (6.15); paramere as in fig. 106 ..... *longicephalus* (p. 67)
- Anterior part of head short (fig. 121), about 0.6-0.8 times as long as the remaining part; body length not exceeding 6 mm (2.90-5.65); paramere not as above ..... 6.
6. Body elongated, 1.80-2.10 times longer than broad ..... 7.
- Body oval, 1.50-1.76 times longer than broad ..... 8.
7. Body length not exceeding 3.5 mm (2.9-3.17); pronotum almost rectangular in outline, about twice as broad as long; 3rd antennal segment about 2.0-2.3 times longer than the 2nd ..... *minor* (p. 68)
- Body length exceeding 3.5 mm (3.8-5.25); pronotum subquadrate in outline, about 1.5-1.75 times broader than long; 3rd antennal segment about 2.3-2.8 times longer than the 2nd ..... *nitidus* (p. 73)
8. Lateral parts of pronotum broadened and flattened; paramere as either in fig. 98 or in fig. 108 ..... 9.
- Lateral parts of pronotum normally developed; paramere not as above ..... 10.
9. Body length exceeding 4.5 mm (4.85-5.65); each lateral margin of pronotum with 6-7 submarginal setigerous punctures; pronotum subquadrate, 1.56-1.71 times broader than long; ocular index 2.97-3.32; paramere, penis and proctiger as in figs. 98, 99, 100, respectively ..... *birmanus* (p. 65)



- Body length not exceeding 4.5 mm (3.34-3.51); each lateral margin of pronotum with 5 submarginal setigerous punctures; pronotum almost rectangular, 1.83-1.90 times broader than long; ocular index 3.91-4.63; paramere, penis and proctiger as in figs. 108, 109, 110, respectively ..... *martensi* (p. 67)
- 10. Paramere as in fig. 120; 3rd antennal segment about 3.1-3.3 times longer than the 2nd; ocular index about 3.2 ..... *nitidulus* (p. 72)
- Paramere not as above; 3rd antennal segment about 1.5-3.0 times longer than the 2nd; ocular index about 3.4-4.4 ..... 11.
- 11. Proctiger as in fig. 102; apical part of penis without sclerified pair of appendages (fig. 101); each lateral margin of pronotum with 7 submarginal setigerous punctures ..... *brunneus* (p. 66)
- Proctiger as in fig. 119; apical part of penis with distinct sclerified pair of appendages (fig. 118); each lateral margin of pronotum with 5-6 submarginal setigerous punctures ..... *nepalensis* (p. 71)

### ***Chilocoris (Chilocoris) birmanus*, new species**

(figs. 98-100)

**DIAGNOSIS.** - The species is best diagnosed by a set of the following characters: the body oval, 4.85-5.65 mm in length; the pronotum subquadrate, 1.56-1.71 times longer than broad, laterally broadened and flattened, submarginally bearing 6-7 setigerous punctures; the pronotal disc with irregularly scattered punctures not forming a transverse postmedian row; the ocular index from 2.97 to 3.32. *C. birmanus* is similar to *C. (C.) nitidus* in the genitalia, but differs distinctly from the latter in the shape of proctiger.

**DESCRIPTION.** - Head dark castaneous or brownish black, dorsally with several small punctures; clypeus tapering apicad, as long as or slightly shorter than paraclypei, subapically with two pegs; each paraclypeus with a row of 8-10 submarginal setigerous punctures (6-7 pegs and 2-3 hair-like setae); eyes brown or reddish brown, ocular index 3.23 (female) or 2.97- 3.32 (male); ocelli of the same colour as eyes, interocellar index 3-5; antennae brown or dark brown with basal part of the 2nd and apical part of the 3rd, 4th and 5th segments somewhat paler, 3rd segment about 3 times longer than the 2nd; rostrum brown, reaching or surpassing middle coxae.

Pronotum of the same colour as head; anterior part broader than head; lateral parts broadened and flattened, punctured; posterior lobe with a band of small punctures not reaching the posterior margin; each lateral margin with a row of 6-7 submarginal setigerous punctures.

Scutellum of the same colour as pronotum; basal part impunctate, the remaining surface with distinct punctures larger than those on pronotum; apex with tiny punctures.

Corium dark castaneous, distinctly punctured with punctures smaller than those on scutellum; clavus with one distinct row of punctures; mesocorium with two rows of punctures paralleling clavo-corial suture; exocorium impunctate except for a row of punctures; membrane browned, semihyaline, broader and longer than abdomen.

Propleuron dark castaneous or blackish brown, depression with several punctures.

Abdomen dark castaneous or blackish brown, sternites smooth, laterally with punctures bearing short shining hairs.

Legs dark castaneous, not specifically modified.

Penis as in fig. 99; paramere similar to that of *C. (C.) nitidus*, but broader in the apical part (fig. 98); proctiger (fig. 100) similar to that of *C. (C.) nitidus*, but distinctly longer.

Measurements (male and female respectively): body length 5.00-5.65, 4.85; body width 2.89-3.25, 3.01; head length 0.69-0.70, 0.73; head width 1.01-1.03, 1.01; pronotum length 1.63-1.90, 1.66; pronotum width 2.76-3.00, 2.84; scutellum length 1.41-1.46, 1.37; scutellum width 1.73-1.93, 1.78; antennal segments: 0.21-0.26 : 0.13-0.15 : 0.41-0.45 : 0.43-0.48 : 0.57-0.59, 0.25 : 0.14 : 0.42 : 0.43 : 0.50.

TYPE MATERIAL EXAMINED

Holotype male: [BURMA]: Birmanie, Mines de rubis, ex. Mus. OBERTHUR, Coll. R.I.Sc.N.B. (IRSNB).

Paratypes: 1 female: [INDIA]: India, Bengal, Kurseong 1904, R.P. VERSCHRAEGHEN, ex coll. R.I.Sc.N.B. (JAL); 1 male: [INDIA]: Sikkim (JAL).

DISTRIBUTION. - Burma, North India.

***Chilocoris (Chilocoris) brunneus*, new species**

(figs. 101-102)

DIAGNOSIS. - The species belongs to the group of species in which punctures on the pronotal disc are irregularly scattered, and the lateral parts of pronotum are normally developed (not broadened). It is related to *C. (C.) nepalensis* in the general habitus, but can be easily distinguished from the latter by the genitalia and a number of submarginal setigerous punctures on lateral margins of pronotum (7 in *brunneus*, 5-6 in *nepalensis*).

DESCRIPTION. - Head dark brown; dorsally with distinct small punctures; clypeus free, wrinkled, as long as paraclypei, subapically with two pegs; each paraclypeus submarginally with 7-8 pegs and 3 hair-like setae; eyes dark brown, ocular index 4.4; ocelli reddish brown, interocellar index 2.8; antennae brown, 3rd segment 2.6 times longer than the 2nd; rostrum pale brown, reaching middle coxae.

Pronotum brown, lateral parts more yellowish; disc entirely (except calli) punctured; each lateral margin with 7 submarginal setigerous punctures.

Scutellum of the same colour as pronotum, disc with well separated scattered punctures.

Corium of the same colour as scutellum and pronotum, exocorium slightly more yellowish; clavus with one short and one long row of punctures; mesocorium with irregularly scattered punctures larger than those on pronotum, and with two rows of punctures paralleling clavo-corial suture; exocorium with punctures slightly smaller than those on mesocorium; membrane semihyaline, browned, longer and broader than abdomen.

Propleuron brown, depression with several punctures close to coxae.

Sternites brown, laterally with hairs. Legs pale brown, not specifically modified.

Penis as in fig. 101, proctiger as in fig. 102.

Measurements (male only): body length 4.19; body width 2.39; head length 0.64; head width 0.90; pronotum length 1.12; pronotum width 2.10; scutellum length 1.09; scutellum width 1.37; antennal segments: 0.21 : 0.12 : 0.31 : 0.32 : 0.33.

TYPE MATERIAL EXAMINED

Holotype male: [BURMA]: Burma, Mishmi Hills, Dingliang, 2,450 ft., 12.iii.1935 (JAL).

DISTRIBUTION. - Burma.

***Chilocoris (Chilocoris) longicephalus*, new species**

(figs. 103-107)

**DIAGNOSIS.** - The elongated head with the part anterior to eyes as long as the remaining part separates this species from all other members of the subgenus.

**DESCRIPTION.** - Head almost blackish brown; anterior part elongated (fig. 103), lateral margins basally almost parallel; entire dorsal surface (with exception of posterior part) slightly wrinkled and distinctly punctured; clypeus impunctate, shorter than paraclypei, subapically with two pegs; each paraclypeus submarginally with 6 pegs and 3 hair-like setae; eyes red, ocular index 2.76; ocelli small, yellowish red, interocellar index 3.1; antennae dark brown, long, 3rd segment 2.4 times longer than the 2nd; rostrum brown, reaching middle coxae.

Pronotum dark castaneous, lateral parts almost black; calli smooth divided by distinct short impressed line; remaining part of disc densely punctured (fig. 104); each lateral margin with a row of 8 submarginal setigerous punctures.

Scutellum almost black, medially dark castaneous; disc densely punctured especially in apical part, punctures somewhat larger than those on pronotum.

Corium (fig. 104) castaneous; mesocorium almost evenly punctured, and with two rows of punctures paralleling clavo-corial suture; clavus with 2 rows of punctures (short and long); exocorium with a row of punctures close to mesocorium; membrane brown, semihyaline, distinctly surpassing the tip of abdomen.

Propleuron smooth, depression with a few punctures; meso- and metapleuron as in fig. 105.

Sternites dark castaneous, smooth and shining; lateral parts with short, yellowish brown hairs.

Legs blackish brown, spines reddish brown, tarsi yellowish brown.

Paramere and penis as in figs. 106 & 107, respectively.

Measurements (male only): body length 6.15; body width 3.17; head length 0.78; head width 1.14; pronotum length 1.71; pronotum width 3.04; scutellum length 1.58; scutellum width 1.95; antennal segments: 0.31 : 0.21 : 0.50 : 0.48 : 0.57.

**TYPE MATERIAL EXAMINED**

Holotype male: [CHINA]: Ta-tsien-lu, Sztschwan, China, St. BREUNING ded.; *Chilocoris* (ZIP).

**DISTRIBUTION.** - South China (Sichuan).

***Chilocoris (Chilocoris) martensi*, new species**

(figs. 108-110)

**DIAGNOSIS.** - The species belongs to the group of species in which all punctures on the pronotum are scattered irregularly. It is related to *C. (C.) nepalensis* in a general habitus, and to *C. (C.) birmanus* in the broadened lateral parts of pronotum. Nevertheless, it differs from the former in the flattened and broadened lateral parts of pronotum, and from the latter in the body length (4.85-5.05 in *birmanus*, 3.34-3.51 in *martensi*), a number of submarginal setigerous punctures on the pronotum (6-7 in *birmanus*, 5 in *martensi*), and in a general outline of the pronotum (subquadrate in *birmanus*, almost rectangular in *martensi*). Besides, *C. martensi* differs distinctly from both mentioned species in a shape of the genitalia.

**DESCRIPTION.** - Head brown or ochraceous; dorsally slightly wrinkled and distinctly

punctured with small punctures; clypeus free, as long as or slightly shorter than paraclypei, subapically with two pegs; each paraclypeus submarginally with a row of 5-6 pegs and 3 hair-like setae; eyes reddish brown, ocular index 4.20-4.63 (male) or 3.91 (female); ocelli reddish brown, interocellar index 3-4; antennae brown or pale brown, 3rd segment 2.6-2.9 times longer than the 2nd; rostrum pale brown, reaching middle coxae.

Pronotum of the same colour as head; lateral parts broadened and flattened, submarginally with 5 setigerous punctures; disc densely punctured over almost entire surface; calli somewhat elevated, finely punctured, and divided by short incised line.

Scutellum of the same colour as pronotum, entirely densely punctured except anterolateral angles and the extreme tip; punctures slightly larger than those on pronotum.

Corium of the same colour as scutellum or slightly more yellowish than the latter; clavus with one distinct row of punctures; mesocorium with numerous scattered punctures especially in apical part, and with two rows of punctures paralleling clavo-corial suture; exocorium almost impunctate, except for one row close to mesocorium; membrane hyaline, slightly browned, only a little surpassing the tip of abdomen.

Propleuron brown or ochraceous, depression with a few punctures.

Sternites castaneous, with scattered punctures bearing short hairs.

Legs pale brown or ochraceous, not specifically modified.

Genital structures as in figs. 108-110.

Measurements (male and female respectively): body length 3.34-3.39, 3.51; body width 2.02-2.10, 2.27; head length 0.68-0.71, 0.70; head width 0.87-0.89, 0.96; pronotum length 1.05-1.12, 1.15; pronotum width 1.95-1.99, 2.05; scutellum length 0.96-0.99, 1.07; scutellum width 1.15-1.19, 1.27; antennal segments: 0.18-0.19 : 0.11-0.12 : 0.29-0.31 : 0.26-0.28 : 0.41-0.42, 0.21 : 0.13 : 0.31 : 0.31 : 0.45.

#### TYPE MATERIAL EXAMINED

Holotype male: [NEPAL]: 361, Taplejung Distr., upper Simbua Khola Valley, near Tseram, 3250-3350 m, mature *Abies-Rhododendron* forest, 10-15 May 1988, J. MARTENS & W. SCHAWALLER leg. (JMC).

Paratypes: 1 male 1 female: [NEPAL]: 361, Taplejung Distr., upper Simbua Khola Valley, near Tseram, 3250-3350 m, mature *Abies-Rhododendron* forest, 10-15 May 1988, J. MARTENS & W. SCHAWALLER leg. (JMC, JAL).

DISTRIBUTION. - Nepal.

BIOLOGICAL DATA. - The type material has been collected in a mature *Abies - Rhododendron* mountain forest.

### *Chilocoris (Chilocoris) minor* Hsiao

*Chilocoris minor* Hsiao in Hsiao et al., 1977: 45 & 296.

DIAGNOSIS. - This species can be separated from all other members of the subgenus (except *C. nepalensis*) by the small body size (2.9-3.17 mm in length). From extremely small (3.10-3.19 mm) specimens of *C. (C.) nepalensis* it can be at once distinguished by almost rectangular pronotum, twice as broad as long (1.67-1.83 times broader than long in *nepalensis*), and by a general shape of the body (about twice as long as broad in *minor*, 1.63-1.76 times longer than broad in *nepalensis*).

DESCRIPTION. - Head dark brown; dorsally punctured, especially in posterior half; clypeus as long as paraclypei, subapically with two pegs; each paraclypeus with 10 submarginal setigerous punctures (8 pegs and 2 hair-like setae); eyes blackish brown, ocular index 3.78; ocelli reddish brown, interocellar index 5.0; antennae brown, 3rd segment 2.0-2.3 times longer than the 2nd; rostrum pale brown, reaching middle of mesosternum.

Pronotum dark brown; disc distinctly, evenly punctured, except calli and posterior margin; each lateral margin with a row of 6-8 submarginal setigerous punctures.

Scutellum of the same colour as pronotum, densely and almost evenly punctured; punctures larger than those on pronotum.

Corium more yellowish than pronotum and scutellum; clavus with one row of punctures; mesocorium densely punctured in apical half, two rows of punctures parallel clavo-corial suture; exocorium almost impunctate, except for a row of punctures; all punctures on corium of the same size as those on scutellum; membrane hyaline, distinctly surpassing the tip of abdomen.

Propleuron castaneous, almost smooth; depression impunctate.

Sternites reddish brown, alutaceous, with single punctures bearing short hairs.

Legs brown, not specifically modified.

Measurements (male and female respectively): body length 2.90, 3.17; body width 1.40, 1.51; head length 0.33, 0.46; head width 0.65, 0.73; pronotum length 0.67, 0.89; pronotum width -, 1.63; scutellum length 0.80, 0.95; scutellum width -, 1.09; antennal segments: 0.14 : 0.10 : 0.21 : 0.23 : 0.31, 0.14 : 0.10 : 0.21 : 0.25 : 0.32.

MATERIAL EXAMINED (1 female)

INDIA: India, Bengal, Kurseong 1904, 1 female (JAL).

DISTRIBUTION. - NE India, South China (Yunnan).

REMARK. - The description is based on the examined female and the original Hsiao's description of male (holotype). My requests for a loan of the type material of *Chilocoris minor* Hsiao from the Academia Sinica, have been ignored.

### ***Chilocoris (Chilocoris) montanus*, new species**

(fig. 111-112)

DIAGNOSIS. - The almost impunctate pronotal disc (except for postmedian, interrupted medially, transverse row of punctures, and several punctures on the posterior lobe) combined with the smooth and almost impunctate head separate this species from any other within the subgenus.

DESCRIPTION. - Head dark brown or blackish brown, dorsally impunctate, sometimes with a few punctures between eyes; clypeus as long as paraclypei, subapically with two pegs; each paraclypeus submarginally with a row of 5-6 pegs and 2-3 hair-like setae; eyes blackish brown, ocular index 2.44 (male) or 2.64 (female); ocelli reddish brown, interocellar index 5.0-6.0; antennae brown or dark brown, 3rd segment 3.1-3.4 times longer than the 2nd; rostrum brown, reaching middle of mesosternum.

Pronotum of the same colour as head; disc almost impunctate, except for postmedian, medially interrupted, transverse row of punctures, and a few punctures laterally and on posterior lobe (fig. 111); each lateral margin with 3

submarginal setigerous punctures.

Scutellum of the same colour as pronotum, disc with a few punctures larger than those on pronotum.

Corium light brown or brown, slightly lighter than pronotum and scutellum; clavus with two rows of punctures (one very short); mesocorium with numerous punctures smaller than those on scutellum, and with two rows of punctures paralleling clavo-corial suture; exocorium impunctate except for a row of punctures paralleling mesocorium; membrane browned, surpassing the tip of abdomen.

Propleuron brown or dark brown, depression with a short row of punctures close to coxae; meso- and metapleuron yellowish brown or dark brown.

Sternites dark castaneous, smooth, with scattered punctures bearing short hairs.

Legs brown or pale brown, not specifically modified.

Paramere as in fig. 112.

Measurements (male and female respectively): body length 2.81, 2.88; body width 1.58, 1.64; head length 0.45, 0.49; head width 0.68, 0.70; pronotum length 0.87, 0.89; pronotum width 1.50, 1.58; scutellum length 0.83, 0.90; scutellum width 0.98, 0.99; antennal segments: 0.14 : 0.07 : 0.24 : 0.25 : 0.36, 0.14 : 0.08 : 0.25 : 0.28 : 0.37.

#### TYPE MATERIAL EXAMINED

Holotype male: [NEPAL]: 412, Sankhua Sabha Distr., Arun Valley betw. Mure and Hurure, mixed broad-leaved forest, 2050-2150 m, 9-17 June 88, MARTENS & SCHAWALLER leg. (JMC).

Paratype female: [NEPAL]: 329, Panchthar Distr., betw. Panipurua and Hinwa Khola Valley, cultural land, tree-rich, 20 Apr 1988, 2300-1850m, J. MARTENS & W. SCHAWALLER leg. (JAL).

DISTRIBUTION. - Nepal.

BIOLOGICAL DATA. - Type specimens have been collected in the mountains (mixed forest, cultural land).

### *Chilocoris (Chilocoris) muticus*, new species

(figs. 114-116)

DIAGNOSIS. - This species can be separated from other members of the subgenus by a set of the following characters: the pronotal disc with a postmedian transverse row of punctures; the pronotum broadened in anterior two thirds of lateral parts; the posterior lobe of the pronotal disc with distinct puncturation; the head punctured; the punctures on pronotum and scutellum almost of the same size as those of the apical part of the mesocorium. The new species differs from all others within the subgenus also in a shape of genital structures.

DESCRIPTION. - Head black, apical part blackish brown; dorsal surface slightly wrinkled and with U-shaped row of punctures between eyes; clypeus free, subapically with 2 pegs; each paraclypeus submarginally with a row of 6 pegs and 3 hair-like setae; eyes blackish brown, ocular index 2.71; ocelli reddish brown, interocellar index 4.2; antennae brown, 3rd segment 2.5 times longer than the 2nd; rostrum pale brown, reaching middle coxae.

Pronotum black, lateral carinae and posterior margin blackish brown; disc with postmedian transverse row of punctures (fig. 114); anterior lobe impunctate, anteromedially with shallow broad depression and short incised line; posterior lobe with numerous punctures, some arranged in short rows; each lateral margin broadened in anterior two thirds, submarginally with 3 setigerous punctures.

Scutellum of the same colour as the anterior lobe of pronotum; disc with



scattered, not numerous punctures.

Corium more brownish than pronotum and scutellum; clavus with one partial and one complete row of punctures; mesocorium densely punctured in apical half, two rows of punctures parallel clavo-corial suture; exocorium impunctate, except for a row of punctures; membrane hyaline, slightly browned, surpassing the tip of abdomen.

Propleuron dark castaneous, depression with a few punctures.

Abdomen blackish brown, smooth, laterally with numerous hairs.

Legs dark castaneous, not specifically modified.

Paramere and opening of genital capsule as in figs. 115 & 116, respectively.

Measurements (male only): body length 4.07; body width 2.31; head length 0.60; head width 0.94; pronotum length 1.51; pronotum width 2.25; scutellum length 1.10; scutellum width 1.45; antennal segments: 0.18 : 0.14 : 0.35 : 0.36 : 0.43.

TYPE MATERIAL EXAMINED

Holotype male: [NEPAL]: 344, Taplejung Distr., confluence of Kabeli Khola and Tada Khola, 1000-1050 m, mixed broad-leaved forest, 23-25 Apr 88, MARTENS & SCHAWALLER (JMC).

DISTRIBUTION. - Nepal.

BIOLOGICAL DATA. - The holotype has been collected in a mixed forest.

***Chilocoris (Chilocoris) nepalensis*, new species**

(figs. 117-119)

DIAGNOSIS. - This species belongs to the group of species in which punctures on the pronotum are scattered irregularly. It is best diagnosed within this group by a set of the following characters: the body oval (1.63-1.76x longer than broad); lateral parts of pronotum not broadened; the 3rd antennal segment 1.5-3.0 times longer than the 2nd; the ocular index ranging from 3.45 to 4.20; each lateral margin of the pronotum with 5-6 submarginal setigerous punctures. The species differs from other members of the subgenus also in a shape of the paramere and the penis.

DESCRIPTION. - Head from ochraceous to blackish brown; dorsally distinctly punctured; anterior part distinctly elevated in male specimens; clypeus usually as long as, though sometimes slightly shorter or longer than paraclypei, subapically with two pegs; each paraclypeus submarginally with a row of 6-7 pegs and 3 hair-like setae; eyes reddish brown or dark brown, ocular index 3.40-4.20 (male) or 3.80-4.20 (female); ocelli small, yellowish brown, reddish brown or brown, interocellar index 3.0-5.0; antennae from yellowish brown to dark brown, 3rd antennal segment 1.5-3.0 times longer than the 2nd; rostrum from ochraceous to brown, reaching middle of mesosternum, sometimes the anterior margin of middle coxae.

Pronotum of the same colour as head; anterior lobe more or less densely punctured around calli; posterior lobe with more or less distinct puncturation; each lateral margin with a row of 5-6 submarginal setigerous punctures.

Scutellum of the same colour as pronotum; disc punctured especially in apical half, sometimes entirely (except anterolateral angles) densely punctured.

Corium slightly paler than pronotum and scutellum, entirely densely punctured except for smooth band between exo- and mesocorium; clavus with one distinct and one almost indistinct row of punctures; mesocorium with two rows of punctures

paralleling clavo-corial suture; membrane hyaline, slightly browned, surpassing the tip of abdomen.

Propleuron from yellowish brown to dark castaneous, alutaceous; depression with several coarse punctures close to coxae.

Sternites from yellowish brown to dark castaneous, laterally with hairs.

Legs from yellowish brown to dark castaneous, not specifically modified.

Genital structures as in figs. 117-119.

Measurements (male and female respectively): body length 3.19-4.00, 3.10-3.85; body width 1.83-2.27, 1.95-2.51; head length 0.49-0.61, 0.51-0.76; head width 0.82-0.95, 0.83-0.97; pronotum length 0.97-1.27, 0.88-1.22; pronotum width 1.70-2.12, 1.71-2.44; scutellum length 0.82-1.02, 0.85-1.12; scutellum width 1.05-1.32, 1.05-1.37; antennal segments: 0.17-0.21 : 0.19-0.18 : 0.25-0.32 : 0.31-0.38 : 0.42-0.45, 0.15-0.21 : 0.10-0.13 : 0.29-0.33 : 0.27-0.29 : 0.36-0.44.

#### TYPE MATERIAL EXAMINED

Holotype male: [NEPAL]: Umg. Goropani, w. Pokhara, Zentral-Nepal, Sept.-Okt. 1971, lg. H. FRANZ, ex collection E. HEISS, Innsbruck (JAL).

Paratypes: 2 males: [NEPAL]: the same data as the holotype (EHC, JAL); 2 females: [NEPAL]: Dzunda Khola-Tal, b. Talphi, 3000-3500 m, Gebiet von Jumla, Westnepal, lg. H. FRANZ, ex collection E. HEISS, Innsbruck (EHC, JAL); 1 male: [NEPAL]: Kali-Gandaki-Tal, zw. Lete u. Tukche, Zentral-Nepal, Sept.-Okt. 1971, lg. H. FRANZ, ex collection E. HEISS, Innsbruck (EHC); 1 female: [NEPAL]: Umg. Pina, 29.9-1.10.72, Gebiet des Rarasees, Westnepal, lg. H. FRANZ, ex collection E. HEISS, Innsbruck (EHC); 2 females: [NEPAL]: Dampalek b. Jumla, Gebiet des Rarasees, Westnepal, lg. H. FRANZ, ex collection E. HEISS, Innsbruck (EHC, JAL); 1 female: [NEPAL]: Gebiet des Rarasees, Westnepal, lg. H. FRANZ, ex collection E. HEISS, Innsbruck (JAL); 1 male: [NEPAL]: Nauche, 3.300 m, Solukhumbu, Sagarmatha, E. Nepal, 30-IX-1979, S. UENO leg. (NSMT); 1 female: [NEPAL]: East Nepal, Dorpani 2760 m, Terhathum Dist., 31. Oct. 1979, M. TOMOKUNI leg. (NSMT); 1 female: [NEPAL]: C. Nepal, Kiumrung, 1.800 m alt., Parbat Dist., 22.X.1981, Y. NISHIKAWA (JAL); 1 female: [NEPAL]: W. Nepal, Rara Lake, 3.000 m alt., Mugu Dist., 25.IX.1981, M. TOMOKUNI (NSMT); 1 female: [NEPAL]: West Nepal, Jhari Pass (3050m), nr. Rara Lake, 25.IX.1981, M. SAKAI (NSMT); 1 male 1 female: [NEPAL]: Thakkhola, Tukche, Thaksang, 3100-3300 m, 27.Feb.-11.Mt. 1974 (JMC, JAL); 1 male 1 female: [NEPAL]: 356, Taplejung Distr., Omje Kharka, NW Yamputhin, mature mixed broad-leaved forest, 2300-2500 m, 1-6 May 88, MARTENS & SCHAWALLER (JMC, JAL); 1 female: [NEPAL]: 275, Taplejung Dist., Grat Lasse Dhara und Alm Lasse-tham, 3000-3300 m, *Abies/Rhodo.*, 6/7 Sep. 83, MARTEN & DAAMS L. (JMC); 1 female: [NEPAL]: 157, Mustang Dist., Thaksang, 3150-3400 m, *Pinus excelsa Abies*, Lichtung, MARTENS & AUSOBSKY, 26/29 April 1980 (JMC); 1 female: [NEPAL]: 404, Sankhua Sabha Distr., above Pahakhola, 2600-2800 m, *Quercus semecarpifolia Rhododendron*, 31 May to 3 June 88, MARTENS & SCHAWALLER (JMC); 1 male 1 female: [INDIA]: Sikkim, Lachung, 9-10.000 ft., iii-iv.1920, H. STEVENS (BMNH, JAL); 1 female: [INDIA]: Sikkim, Tonglo, 13-16.vi.1920, H. STEVENS (BMNH); 2 females: [INDIA]: Tonglu, 10.074 ft., H. STEVENS, Nepal-Sikkim Frontier, July-August, 1919 (BMNH); 1 female: [INDIA]: Kaiyakata, 2.900-3.000 m, Singalila Dara, West Bengal, India, 2-X-1983, Y. NISHIKAWA (NSMT); 1 male: [INDIA]: N.E. India, Bagora, 2.150 m, nr. Darjeeling, 9.XI.1981, M. TOMOKUNI (JAL).

DISTRIBUTION. - Nepal, North India.

BIOLOGICAL DATA. - Type specimens have been collected in different types of mountain forests (*Abies-Rhododendron* forest, *Quercus semercapinifolia-Rhododendron* forest, *Pinus excelsa-Abies* forest) at the altitude of 2300-3500 m a.s.l.

### *Chilocoris (Chilocoris) nitidulus*, new species

(fig. 120)

DIAGNOSIS. - The species is related to *C. (C.) nitidus* in a general habitus, but differs from the latter in a shape of the pronotum (1.85 times broader than long in *nitidulus*, 1.50-1.75 in *nitidus*), a relative length of the 2nd and the 3rd antennal segments (3rd segment 3.2 times longer than the 2nd in *nitidulus*, 2.3-3.0 times in *nitidus*), and in a shape of the paramere.

DESCRIPTION. - Head dark castaneous, dorsally with scattered small punctures, especially numerous between eyes; clypeus free, as long as paraclypei, subapically with two pegs; each paraclypeus submarginally with a row of 6 pegs and 3 hair-like setae; eyes reddish brown, ocular index 3.23; ocelli reddish brown, interocellar index 3.7; antennae dark brown, 3rd antennal segment 3.2 times longer than the 2nd; rostrum brown.

Pronotum dark castaneous; posterior lobe with broad transverse band of punctures not reaching posterior margin; each lateral margin with a row of 6 submarginal setigerous punctures.

Scutellum of the same colour as pronotum, punctured in apical half.

Corium of the same colour as pronotum; clavus with one complete and one partial row of punctures; mesocorium evenly punctured, especially in apical part, two rows of punctures parallel clavo-corial suture; exocorium impunctate except for a row of punctures; membrane semihyaline, browned, distinctly surpassing the tip of abdomen.

Propleuron dark castaneous, depression with a few punctures close to coxae.

Sternites dark castaneous, with small punctures along each segmental suture; lateral parts with hairs.

Legs castaneous, not specifically modified. Paramere as in fig. 120.

Measurements (male only): body length 4.14; body width 2.49; head length 0.73; head width 0.96; pronotum length 1.29; pronotum width 2.45; scutellum length 1.22; scutellum width 1.57; antennal segments: 0.14 : 0.12 : 0.39 : 0.36 : 0.49.

#### TYPE MATERIAL EXAMINED

Holotype male: [NEPAL]: Umg. Goropani, w. Pokhara, Zentral-Nepal, Sept.-Okt. 1971, lg. H. FRANZ, ex collection E. HEISS, Innsbruck (JAL).

DISTRIBUTION. - Nepal.

### *Chilocoris (Chilocoris) nitidus* MAYR

(figs. 121-125)

*Chilocoris nitidus* MAYR, 1864: 907; WALKER, 1867: 170; STÅL, 1876: 21; SIGNORET, 1884a: 518; ATKINSON, 1887: 57; LETHIERRY & SEVERIN, 1893: 75; DISTANT, 1902: 105; MAXWELL-LEFROY, 1909: 306; MAXWELL-LEFROY & HOWLETT, 1909: 674; SINGH et al., 1955: 657; HSIAO et al., 1977: 45; STICHEL, 1962: 777 [part]; AHMAD et al., 1979: 17.

*Chilocoris nitida*: AHMAD et al., 1979: 14.

Misidentifications: DISTANT, 1902: fig. 55; STICHEL, 1962: 777 [part].

DIAGNOSIS. - This species belongs to the group of species in which all punctures on the pronotum are scattered irregularly. It is best diagnosed by a set of the following characters: the pronotum subquadrate (1.54-7.75 times broader than long); the body elongated (1.79-1.94 times longer than broad), varying from 3.80 to 5.25 mm in length; the ocular index ranging from 2.85 to 3.55; the 3rd antennal segment 2.3-3.0 times longer than the 2nd.

DESCRIPTION. - Head (fig. 121) from castaneous to blackish brown, dorsally wrinkled and punctured; clypeus as long as or slightly shorter than paraclypei, subapical with two pegs; each paraclypeus submarginally with a row of 9-10 setigerous punctures (6-7 pegs and 3 hair-like setae); eyes reddish brown or blackish brown, ocular index 2.85-3.55; ocelli brown or reddish brown, interocellar index 3.0-5.0; antennae from brown to dark castaneous, 3rd antennal segment 2.3-3.0 times longer than the 2nd; rostrum light brown, brown or castaneous,

surpassing middle of mesosternum, at best reaching anterior margin of middle coxae.

Pronotum from brown to brownish black, sometimes posterior lobe and lateral parts somewhat paler; anterior lobe usually impunctate, the posterior with more or less distinct transverse band of numerous punctures (fig. 122), sometimes disc entirely almost impunctate; each lateral margin with a row of 5-7 submarginal setigerous punctures.

Scutellum of the same colour as pronotum, usually with not numerous blackish brown punctures; apex and basal part impunctate.

Corium somewhat paler than both pronotum and scutellum; puncturation as in *C. (C.) nitidulus*; membrane browned, broader and longer than abdomen.

Propleuron reddish brown, chocolate brown or dark castaneous, smooth; depression with a few punctures; evaporatoria as in fig. 123.

Sternites from castaneous to almost black, smooth and shining; lateral parts with short hairs.

Legs from pale brown to dark, not specifically modified.

Paramere and opening of genital capsule as in figs. 124 & 125, respectively.

Measurements (male and female respectively): body length 3.80-5.10, 3.90-5.25; body width 2.10-2.68, 2.29-2.76; head length 0.64-0.70, 0.61-0.77; head width 0.83-1.01, 0.85-1.05; pronotum length 1.15-1.56, 1.29-1.58; pronotum width 2.00-2.56, 2.19-2.61; scutellum length 1.07-1.51, 1.12-1.51; scutellum width 1.22-1.62, 1.29-1.68; antennal segments: 0.18-0.19 : 0.11-0.15 : 0.32-0.38 : 0.34-0.36 : 0.47-0.49, 0.18-0.21 : 0.13-0.15 : 0.33-0.38 : 0.34-0.36 : 0.43-0.53.

#### TYPE MATERIAL EXAMINED

Lectotype female of *Chilocoris nitidus* MAYR (present designation): [INDIA]: Hügel Kaschmir; *nitidus* det. MAYR; *Chilocoris*; Type *nitidus* MAYR, labelled by R.C. FROESCHNER; Coll. Nat.-Mus. Wien, Lectotype (NhMW).

#### OTHER MATERIAL EXAMINED (34 males, 31 females)

INDIA: Inde, Barway, 1 female, P. CARDON, det. as *Cydnius nigrinus* FAB. (IRSNB); India Bengal, Kurseong, 3 females 3 males 1904, R.P. VERSCHRAEGHEN, Coll. R.I.Sc.N.B. (IRSNB, JAL); Dardjiling, 1 male, Harmano 4741-86, Muséum Paris (MNHN); Uttar Pradesh, Mussoorie, c. 1500-2200m, 1 female 3-14.VIII.1978, Copenhagen Zool. Mus. Exp. (ZMC); Sikkim, Gopaldhara, Rungbong Vall., 11 males 8 females, H. STEVENS (BMNH, JAL); Gopaldhara, Rungbong Valley, Darjiling, 1 male Dec. 20, 3500 ft., H. STEVENS (JAL); Gopaldhara, Bw., Darjeeling, 1 female 3340-4720 ft. 15-IX-14, 2 females 4720 ft. 8-IX-14, On Ground, H. STEVENS (BMNH); W. Almora, Kumaon, U.P., India, 1 male, H.G.C. (BMNH); Himalaya, Chaubattia, Almora District, 6-7000 ft., 1 female, 1920-175, S.R. ARCHER (JAL).

NEPAL: Népal oriental, Exp. Jannu, 1 male, DREUX IV-V-1959, Muséum Paris (MNHN); Barabise geg., Ting-Sang-La, Nepal, lg. H. FRANZ, collection E. HEISS, Innsbruck (EHC, JAL); Gebiet von Jumla, Westnepal, Umg. Talphi, 2 females 17-25.9.72, lg. H. FRANZ, collection E. HEISS, Innsbruck (EHC); W-Nepal, Kali Gandaki Khola, Kalopani 2400 m, 1 male 18.5.84, Holzschuh, ex. collection E. HEISS, Innsbruck (JAL); Nepal, Bakhri Kharka, 5500 ft., 1 female 24.iv.1954, J. QUINLAN, B.M. Nepal Expdt., B.M. 1954-540 (BMNH); Kakani, 2000 m, Kathmandu Valley, E. Nepal, 2 females 9-IX-1981, Y. NISHIKAWA (NSMT, JAL); East Nepal, Gufa 2950 - Chauki 2730 m, Terhathum Dist., 1 female 30 Oct. 1979, M. TOMOKUNI leg. (NSMT); West Nepal, Chautha 2850 m - Bhulbhule 3270 m, nr. Jumla, 1 female 23.IX.1981, M. SAKAI leg. (NSMT); Phakding, 2580 m, Solukhumbu, Nepal, 1 male Sept. 29, 1979, M. SATO leg. (NSMT); W. Nepal, Ghughuti, 2660 m alt., Jumla Dist., 1 male 21.IX.1981, M. TOMOKUNI (JAL); 356, Taplejung Distr., Orme Kharka, NW Yamputhin, mature mixed broad-leaves forest, 2300-2500 m, 1 male 2 females 1-6 May 88, MARTENS & SCHAWALLER (JMC, JAL); 404, Sankhua Sabha Distr., above Pahakhola, 2600-2800 m, *Quercus semecarpifolia Rhododendron*, 1 male 31 May to 3 June 88, MARTENS & SCHAWALLER (JMC); 412, Sankhua Sabha Distr., Arun Valley betw. Mure and Hurure, mixed broad-leaves forest, 2050-2150 m, 1 male 9-17 June 88, MARTENS & SCHAWALLER leg. (JMC); 374, Taplejung Distr., upper Tanur Valley, from Lungthung/water-fall to bamboo bridge, 1800-2150 m, open forest, bushes, 1 female 19 May 88, J. MARTENS & W. SCHAWALLER leg. (JMC); 319, Ilan Distr., Mai Pokhari, 2100-2200 m, *Castanopsis* forest remnants, 2 males 9-10 April 1988, J. MARTENS & W. SCHAWALLER leg. (JMC, JAL); 351, Taplejung Distr., Yamputhin, cultural land, open forest, 1650-1800 m, 2 males 1 female 26 Apr. - 1 May 1988, J. MARTENS & W. SCHAWALLER leg. (JMC, JAL); 365, Taplejung Distr., Yamputhin, ascent to pass Deorali, 2600 m, cultural land, bushes, 1 male 16 May 88, J. MARTENS & W. SCHAWALLER leg. (JMC); 335, Taplejung Distr., descent from Werebung Pass to Uyam, 2000-1500 m, tree-rich cultural land, 1 female 21 Apr. 88, J. MARTENS & W. SCHAWALLER leg. (JMC); 290, Taplejung Distr., Tamur Khola, Chirua, 1200 m fein erdiger Boden,

Schlucht-W, 1 male 14 Sept. 83, MARTENS & DAAMS l. (JMC); 334, Taplejung Distr., Worebung Pass, degraded broad-leaves forest, 2000 m, 1 male 21 Apr. 1988, J. MARTENS & W. SCHAWALLER leg. (JMC); 348, Taplejung Distr., from Khebang to pass NW Khebang, bushes degraded forest, 1700-2100 m, 1 male 25 Apr. 88, J. MARTENS & W. SCHAWALLER leg. (JMC); 318, Ilam Distr., betw. Ilam and Mai Pokhari, 1600-2000 m, cultural land, trees, 1 female 9 April 1988, J. MARTENS & W. SCHAWALLER leg. (JMC); 320, Ilam Distr., betw. Mai Pokhari and Gitang Khola Valley, 2100-1750 m, tree-rich cultural land, 1 male 17 Apr. 1988, J. MARTENS & W. SCHAWALLER leg. (JMC).

SOUTH CHINA: Ta-tsien-lu, Sechuan, China, 1 female, St. BREUNING ded. (ZIP); Kiang-Si, 1 male, A. DAVID 1875, Muséum Paris (MNHN).

DISTRIBUTION. - Nepal, North India, South China (Sichuan, Yunnan, Jiangxi, Hunan).

The record from Japan (TOMOKUNI, 1979) was probably based on misidentification. I have examined also two specimens of this species labelled "Java occid., VIII-1892, Mons Gede 4000', H. FRUHSTORFER, Coll. R.I.Sc.N.B.", but I regard these individuals as being mislabelled.

BIOLOGICAL DATA. - MAXWELL-LEFROY & HOWLETT (1909) found this species in the soil under stones or among decaying vegetation, and wrote that normally it bred at roots of grasses. During my studies I examined specimens which have been collected in different types of mountain forests (*Castanopsis* forest, *Quercus semecarpinifolia-Rhododendron* forest, mixed forest), in bushes, and mountain cultural lands.

### ***Chilocoris (Chilocoris) philippinensis*, new species**

(figs. 126-127)

DIAGNOSIS. - This new species belongs to the group of species in which punctures on the pronotal disc form a postmedian transverse row. The species can be easily recognized within this group by the following characters: the body length exceeding 4 mm (4.24-4.27); the posterior lobe of the pronotal disc distinctly densely punctured; lateral parts of the pronotum broadened in anterior two thirds, and submarginally with 3 setigerous punctures; punctures on the pronotum and the scutellum larger than those of the apical part of the mesocorium. The new species differs from all others within the subgenus also in a shape of genitalia.

DESCRIPTION. - Head dark castaneous, lateral margins slightly paler; clypeus free, wrinkled, as long as paraclypei, subapically with two pegs; each paraclypeus wrinkled, submarginally with a row of 6 pegs and 3 hair-like setae; eyes reddish brown, ocular index 2.93-3.03; ocelli reddish brown, interocellar index 2.5-3.5; antennae pale brown or brown, 3rd antennal segment 2.5-2.8 times longer than the 2nd; rostrum pale brown or brown, reaching middle coxae.

Pronotum with postmedian transverse row of punctures; anterior lobe of the same colour as head, smooth and impunctate, calli divided by short incised line; posterior lobe castaneous densely punctured; lateral parts in anterior two thirds distinctly broadened; each lateral margin with 3 submarginal setigerous punctures.

Scutellum of the same colour as the posterior lobe of pronotum; disc with irregularly scattered dark punctures of the same size as those on pronotum.

Corium of the same colour as scutellum; clavus with two rows of punctures (short and long); exocorium almost impunctate, except for a row of punctures paralleling mesocorium; the latter apically with punctures distinctly smaller than those on pronotum and scutellum, and two rows of punctures paralleling clavo-corial suture; membrane semihyaline, browned, only slightly surpassing the



tip of abdomen.

Propleuron dark castaneous, wrinkled; depression with single punctures.

Sternites dark castaneous with scattered punctures bearing hairs.

Legs pale brown or brown, not specifically modified.

Genital structures as in figs. 126-127.

Measurements (male only): body length 4.24-4.27; body width 2.41-2.49; head length 0.59-0.67; head width 0.95-0.98; pronotum length 1.49-1.58; pronotum width 2.36-2.42; scutellum length 1.10-1.15; scutellum width 1.44-1.49; antennal segments: 0.18-0.21 : 0.14-0.15 : 0.38-0.39 : 0.38-0.39 : 0.47-0.48.

#### TYPE MATERIAL EXAMINED

Holotype male: [PHILIPPINES]: Luzon, Philippines, Mt. Pugu (1950m), Mountain Prov., 16.VII.1985, M. SAKAI leg. (NSMT).

Paratype male: [PHILIPPINES]: Luzon, Philippines, Paoay (2400m), nr. Sayangan, Benguet Prov., 11.VII.1985, M. SAKAI leg. (JAL).

DISTRIBUTION. - Philippines.

### ***Chilocoris (Chilocoris) thaicus, new species***

(fig. 128)

DIAGNOSIS. - This species belongs to the group of species in which punctures on the pronotum form a postmedian transverse row; it differs from all other members of this group in the presence of 4-5 submarginal setigerous punctures on each lateral margin of the pronotum (3 in the remaining species). Additionally, the species differs from *C. (C.) montanus* in the conspicuously punctured posterior lobe of the pronotum (the lobe is almost smooth in *montanus*), and from both *C. (C.) philippinensis* and *C. (C.) muticus* in not broadened lateral parts of the pronotum.

DESCRIPTION. - Head dark castaneous, dorsally with numerous punctures between eyes; clypeus free, as long as paraclypei, subapically with two pegs; each paraclypeus submarginally with a row of 5-6 pegs and 3 hair-like setae; eyes reddish brown, ocular index 2.91; ocelli reddish brown, interocellar index about 6.0; antennae brown, 3rd antennal segment 3.7 times longer than the 2nd; rostrum pale brown, reaching middle coxae.

Pronotum dark castaneous; disc with postmedian transverse row of punctures (fig. 128); anterior lobe impunctate, except for a few punctures laterally; posterior lobe with numerous scattered punctures; each lateral margin with 4-5 submarginal setigerous punctures.

Scutellum of the same colour as pronotum; disc with numerous scattered dark punctures slightly larger than those on pronotum.

Corium more ochraceous than pronotum and scutellum; clavus with one complete and one partial row of punctures; exocorium impunctate except for a row of punctures parallel to mesocorium; the latter with irregularly scattered punctures smaller than those on scutellum, and with two rows of punctures paralleling clavo-corial suture.

Propleuron dark castaneous, depression with a few punctures and wrinkles close to coxae. Sternites castaneous, with scattered punctures bearing hairs.

Legs castaneous, not specifically modified.

Measurements (female only): body length 3.73; body width 2.00; head length 0.59; head width 0.75; pronotum length 0.61; pronotum width 1.05; scutellum



length 0.59; scutellum width 0.66; antennal segments: 0.17 : 0.08 : 0.31 : 0.31 : 0.42.

TYPE MATERIAL EXAMINED

Holotype female: [THAILAND]: Thailand, Chiang Mai, Doi Sutthap, VIII.4-7.1979 (JAL).

DISTRIBUTION. - Thailand.

### Subgenus *Statanus*, new status

*Statanus* DISTANT, 1908: 430.

DIAGNOSTIC CHARACTERS. - Head submarginally with a row of pegs, not as stout as those in the subgenus *Amnestoides*; pronotal disc with distinct uninterrupted postmedian transverse impressed line; umbones swollen (but not as much as in *Amnestoides*), and concealing posterolateral margins of pronotum; apical process on the inner margin of paramere varying in length and shape.

TYPE OF SUBGENUS. - *Chilocoris assmuthi* BREDDIN, 1904 (= *Statanus membranaceus* DISTANT, 1908).

REMARK. - At present the subgenus contains 14 Oriental species, five previously known (*assmuthi*, *barbarae*, *incomptus*, *piceus*, *pusillus*), and nine new to the science (*biliranus*, *bosmansii*, *campbelli*, *duffelsi*, *pseudopiceus*, *sulcatus*, *sumatranus*, *vanstallei*, *wallacei*).

#### Key to species of sg. *Statanus*

1. Bicoloured species; corium from whitish yellow to pale yellowish brown, distinctly paler than scutellum and pronotum . . . . . 2.
- Uniformly coloured species; corium from ochraceous to blackish brown, of the same colour as scutellum and pronotum, sometimes only slightly paler . . . . . 4.
2. Posterior fourth of pronotal disc or at least umbones of the same colour as corium (whitish yellow, yellow or pale yellowish brown - fig. 113); paramere as in fig. 130 . . . . . *assmuthi* (p. 78)
- Pronotal disc unicolorous; paramere not as above . . . . . 3.
3. Scutellum and posterior lobe of pronotum almost impunctate (fig. 139); paramere as in fig. 140 . . . . . *campbelli* (p. 84)
- Scutellum and posterior lobe of pronotum distinctly punctured (fig. 137); paramere as in fig. 138 . . . . . *bosmansii* (p. 83)
4. Postmedian transverse impressed line on pronotum prolonged laterally towards posterolateral angles (fig. 153); each lateral margin of pronotum with 4-5 submarginal setigerous punctures . . . . . *sulcatus* (p. 91)
- Postmedian transverse impressed line on pronotum not prolonged laterally (figs. 144, 151, 156); lateral margin of pronotum with 1-3 submarginal setigerous punctures . . . . 5.
5. Each paraclypeus submarginally with 1-2 pegs and 3 hair-like setae (fig. 143); paramere as in fig. 145 . . . . . *incomptus* (p. 86)
- Each paraclypeus submarginally with 3-6 pegs and 3 hair-like setae (figs. 131, 150); paramere not as above . . . . . 6.

6. Each lateral margin of pronotum with a single submarginal setigerous puncture on the posterior lobe; genitalia as in figs. 159-160. . . . . **wallacei** (p. 93)
- Each lateral margin of pronotum with 3 submarginal setigerous punctures (fig. 151, 156); genitalia not as above . . . . . 7.
7. Eyes large, ocular index ranging from 1.4 to 1.8 . . . . . 8.
- Eyes smaller, ocular index ranging from 2.0 to 2.9 . . . . . 10.
8. Paramere as in fig. 154; proctiger as in fig. 155 . . . . . **sumatranus** (p. 91)
- Paramere and proctiger not as above . . . . . 9.
9. Paramere as in fig. 157; proctiger as in fig. 158; body from castaneous to dark castaneous, only occasionally dark ochraceous; posterior lobe of pronotum usually with numerous both large and small punctures (fig. 156) . . . . . **vanstallei** (p. 92)
- Paramere as in fig. 135; proctiger as in fig. 136; body from yellowish brown to dark ochraceous, only occasionally castaneous; posterior lobe of pronotum usually with large punctures only . . . . . **biliranus** (p. 82)
10. Body length not exceeding 3.0 mm . . . . . 11.
- Body length exceeding 3.0 mm . . . . . 14.
11. Each paraclypeus submarginally with a row of 5-6 pegs and 3 hair-like setae; paramere as in fig. 146 . . . . . **piceus** [part] (p. 87)
- Each paraclypeus submarginally with a row of 3-4 pegs and 3 hair-like setae; paramere not as above . . . . . 12.
12. Scutellum and posterior lobe of pronotal disc densely punctured, each with more than 20 distinct punctures (usually 25-50), bearing long hairs; paramere as in fig. 134 . . . . . **barbarae** (p. 80)
- Scutellum and posterior lobe of pronotum scarcely punctured, each with less than 20 punctures (usually 10-17); hair-covering not as dense as in the preceding species; paramere not as above . . . . . 13.
13. Paramere as in fig. 146; ocular index 2.4-2.9; body length 1.93-2.25 . . . . . **pusillus** (p. 90)
- Paramere as in fig. 142; ocular index 2.1-2.3; body length 2.26-2.78 . . . . . **duffelsi** (p. 84)
14. Body blackish brown; posterior lobe of pronotal disc almost impunctate, or with a few almost indistinct punctures; paramere as in fig. 148; proctiger as in fig. 149 . . . . . **pseudopiceus** (p. 89)
- Body from ochraceous to dark brown, never blackish brown; posterior lobe of pronotal disc with distinct dark punctures (usually 6-20); paramere as in fig. 146; proctiger as in fig. 147 . . . . . **piceus** [part] (p. 87)

### ***Chilocoris (Statanus) assmuthi* BREDDIN, new combination**

(figs. 113, 130)

*Chilocoris Assmuthi* BREDDIN, 1904: 407; BERGROTH, 1908: 150.

*Chilocoris? assmuthi*: DISTANT, 1908: 428.

*Chilocoristoides assmuthi*: DISTANT, 1913: 141, 1918: 119.

*Statanus membranaceus* DISTANT, 1908: 431, **new synonym**.

*Chilocoris membranaceus*: LIS, 1991b: 172.

*Nishadana membranus* AHMAD, MOIZUDDIN & KHAN, 1979: 20, 22, fig. 13, **new synonym**.

*Nishadana membranus* MOIZUDDIN & AHMAD, 1990: 337, objective synonym of *Nishadana membranus* AHMAD, MOIZUDDIN & KHAN, 1979.

**DIAGNOSIS.** - The species is easily recognizable within the subgenus by whitish yellow, yellow or yellowish brown corium (distinctly paler than both pronotum and

scutellum) coupled with whitish yellow, yellow or yellowish brown either the posterior quarter of the pronotal disc or at least the umbones.

**DESCRIPTION.** - Head brown or dark brown, dorsally impunctate (fig. 113); clypeus as long as paraclypei, subapically with two pegs; each paraclypeus submarginally with a row of 5-7 pegs and 2-3 hair-like setae; eyes reddish brown or blackish brown, ocular index 1.80-2.20; ocelli yellowish brown, orange or reddish brown, interocellar index 9.0-17.0; antennae pale brown or yellowish brown; rostrum yellow, yellowish brown or brown, reaching at best middle of mesosternum.

Pronotum from pale brown to dark piceous brown, always with either posterior fourth or umbones distinctly paler; postmedian transverse impressed line with several punctures laterally (fig. 113); anterior and posterior lobes impunctate, or with a few almost indistinct punctures; each lateral margin submarginally with 3 setigerous punctures.

Scutellum from pale brown to dark piceous brown, always distinctly darker than corium; disc with numerous scattered punctures, apex and basal part almost impunctate (fig. ).

Corium whitish yellow, yellow or yellowish brown, sometimes almost translucent, with three dark brown rows of punctures accompanied by incised line; remaining punctures colourless and almost indistinct (fig. 113); membrane semihyaline, sometimes slightly browned, distinctly surpassing the tip of abdomen.

Propleuron with a few punctures in depression; anterior convexity of the same colour as anterior lobe of pronotum, the posterior of the same colour as corium.

Sternites dark brown, brown or pale brown; lateral parts with numerous punctures bearing whitish hairs.

Legs not specifically modified.

Paramere as in fig. 130.

**Measurements** (male and female respectively): body length 2.80-3.49, 2.90-3.44; body width 1.56-2.00, 1.64-1.91; head length 0.42-0.56, 0.46-0.54; head width 0.68-0.88, 0.74-0.85; pronotum length 0.80-1.10, 0.80-1.10; pronotum width 1.40-1.85, 1.55-1.81; scutellum length 0.66-0.95, 0.77-0.93; scutellum width 0.87-0.98, 0.95-1.09; antennal segments: 0.12-0.16 : 0.05-0.06 : 0.18-0.21 : 0.17-0.21 : 0.18-0.29, 0.14-0.17 : 0.05-0.06 : 0.19-0.24 : 0.18-0.22 : 0.25-0.30.

#### TYPE MATERIAL EXAMINED

Lectotype male of *Statanus membranaceus* DISTANT (designated by LIS, 1991b: 172): [SRI LANKA]: Paradeniya, Ceylon, 9.03; DISTANT coll. 1911-383; Type; *Statanus membranaceus* DIST. Type; Brit. Mus. Type No. Hem. 348; Lectotype det. J.A. LIS 1990 (BMNH).

Holotype male of *Nishadana membranans* MOIZUDDIN & AHMAD: [PAKISTAN]: Host: Light, Loc. Karachi, Date: 25.3.76, coll. MOIZ.; *Nishadana membranans* MOIZUDDIN & AHMAD 1990; Holotype (NHMUK).

#### OTHER MATERIAL EXAMINED (17 males, 35 females)

PAKISTAN: West-Pakistan, Umg. Karachi, 1 male 20-30.10.1971, 2 females 22-30.9.1972, 1 female 1.7.1971, Ig. HEISS, det. as *Chilocoris piceus* SIGN. by SEIDENSTÜCKER 1977 (EHC, JAL).

INDIA: Calcutta, 1 female, ATKINSON Coll., 92-6 (BMNH); Chipurupalli, Vizagapatam Dist., India, 1 female 1 male, R.S. PATUCK, B.M. 1924-7 (BMNH, JAL); Coimbatore, India, 1 male V-VI. 1982, D. LIVINGSTONE (CWS); Coimbatore, Madras St., 1400', P.S. NATHAN, 2 females IV-1962, 1 female IX 1972 (CWS, RNH); South India, Madras State, Coimbatore, 1400ft, 5 males 13 females XI-1966, 2 males 3 females XII-1966, P.S. NATHAN (ZMA, JAL); Fyzabad, Unit. Prov. India, 1 male, R.W.G. HINGSTON, B.M. 1923-293 (BMNH); India, Behar, PUSA, 2 females 30.VI.1915, the Govt. Entomologist, Pres. by Imp. Bur. Ent., Brit. Mus. 1921-191, det. as *Cydinus varians* (BMNH, JAL); India, Dacca, 1 female 3.VI.1945, 1 female 22.VIII.1945, D. LESTON, B.M. 1945-86 (BMNH); Madhapur, Bengal, 1 male 19-X-09, C. PAIVA, DISTANT Coll., 1911-383 (BMNH); Madhya Pradesh, Kanha National Park, 97 km S of Jabalpur, leg. Gy. TOPAL, 1 female 1 male 3.IV.1967, No. 301 singled material (HNHM, JAL); India, Mysore, Bangalore, Karnataka, 916 m, 1 female 26 March 1978, K.D. GHORPADE, ex: malaise trap (AMNH).

NEPAL: Barabise geg., Ting-Sang-La, Nepal, 1 female, Ig. H. FRANZ, Collection E. HEISS, Innsbruck (EHC).

SRI LANKA: Ceylon, Henaratgoda, 1 female 2 males 16/II.02, 2 females 1 male 18.2.1902, Dr. UZEL, det. as *Chilocoris assmuthi* BREDD. by R.C. FROESCHNER 59, coll. Nat.-Mus. Wien (NhMW); Ceylon, Amiradhapura, 1 female 22 II 1953, light trap (JAL); Paradeniya, A.R. Ceylon, 1 male 18.9.13, Ceylon, A. RUTHEFORD, 1919-35 (BMNH).

DISTRIBUTION. - Pakistan, India, Nepal, Sri Lanka.

BIOLOGICAL DATA. - The species was collected by BREDDIN (1904) from a domicile of *Solenopsis rufa* FERR. In Pakistan (AHMAD et al., 1979; MOIZUDDIN & AHMAD, 1990) it was collected at light.

REMARK. - The type material of *C. assmuthi* BREDD. has not been found, despite repeated efforts; fortunately it was detailed redescribed by DISTANT (1908).

### ***Chilocoris (Statanus) barbarae* Lis, new combination**

(figs. 129, 131-134)

*Chilocoris barbarae* Lis, 1991e: 301.

DIAGNOSIS. - Among those members of the subgenus with the uniformly coloured body not exceeding 3.0 mm in length, and with the lateral margins of pronotum each with 3 submarginal setigerous punctures, this species can be delimited by the presence of 3-4 submarginal pegs on each paraclypeus, the ocular index ranging from 2.0 to 2.5, the scutellum and the pronotum densely punctured (each with more than 20 punctures), and the dorsal surface with numerous distinct hairs.

DESCRIPTION. - Body from pale brown to dark brown, dorsally with dark brown or blackish brown punctures bearing distinct hairs.

Head dorsally slightly striated, with darker punctures between eyes (fig. 131); clypeus as long as paraclypei, subapically with two pegs; each paraclypeus submarginally with a row of 6-7 setigerous punctures (3 hair-like setae and 3-4 pegs); eyes reddish brown or blackish brown, ocular index 2.00-2.50; ocelli yellowish brown or reddish brown, interocellar index 6.0-14.0; antennae yellowish brown or pale brown; rostrum yellowish brown or pale brown, reaching middle coxae.

Anterior lobe of pronotum laterally and anteromedially with a few darker punctures, sometimes distinct shallow, median subapical depression is present in male specimens; posterior lobe with more than 20 (25-50) irregularly scattered dark punctures bearing distinct hairs (fig. 132); each lateral margin with 3 submarginal setigerous punctures.

Scutellum of the same colour as pronotum; basal transverse depression and lateral submarginal grooves with distinct blackish brown punctures; disc with numerous (more than 20) scattered blackish brown punctures bearing distinct hairs (fig. 129).

Corium of the same colour as pronotum and scutellum; clavus basally with two rows of punctures; mesocorium with two rows of dark punctures (one usually accompanied by incised line) paralleling clavo-corial suture and with numerous somewhat smaller punctures on remaining surface; membrane hyaline, sometimes slightly browned, extending far beyond the posterior extremity of abdomen.

Propleural depression with a short row of darker punctures; evaporatoria as in fig. 133.

Sternites polished, impunctate except for lateral and posterior punctures bearing long hairs.

Legs yellow or yellowish brown, not specifically modified.

Paramere as in fig. 134.

Measurements (male and female respectively): body length 1.96-2.65, 2.23-2.66; body width 1.17-1.38, 1.22-1.33; head length 0.42-0.45, 0.43-0.44; head width 0.57-0.61, 0.56-0.60; pronotum length 0.63-0.80, 0.64-0.79; pronotum width 1.14-1.38, 1.20-1.31; scutellum length 0.64-0.73, 0.63-0.73; scutellum width 0.71-0.88, 0.76-0.81; antennal segments 0.13-0.15 : 0.07-0.10 : 0.22-0.26 : 0.21-0.25 : 0.31-0.38; 0.13-0.15 : 0.07-0.09 : 0.21-0.23 : 0.21-0.23 : 0.31-0.34.

#### TYPE MATERIAL EXAMINED

Holotype male of *Chilocoris barbarae* Lis: [INDONESIA]: Sulawesi Utara, Dumoga-Bone Nat. Park, Base Camp (200m), 20-X-1985, Station: 039, Project Wallace, leg. R. BOSMANS & J. VAN STALLE, n. 26.977, Coll. R.I.Sc.N.B. *Chilocoris barbarae* Lis, det. J.A. Lis, Holotype (IRSNB).

Paratype female: [INDONESIA]: Sulawesi Utara, Tangkoko Nat. Park, Danau Mooat, 18-XI-1985, Station: 098, Project Wallace, leg. R. BOSMANS & J. VAN STALLE, n. 26.977, Coll. R.I.Sc.N.B. *Chilocoris barbarae* Lis, det. J.A. Lis, Paratype (JAL).

#### OTHER MATERIAL EXAMINED (30 males, 48 females)

INDONESIA: Java, Batavia: 1 female, DOUGLAS, coll. Dr. D. MAC GILLAVRY (ZMA), 1 female Oct. 1947, C.V. NIDEK (ZMA), 3 males 2 females, lamplicht, Museum Leiden, det. as *Chilocoris ritsemæ* SIGN. (RNH); Java, Bogor, 1 male 20.XI.1953, 1 male 28.IV.1954, A.H.G. ALSTON, B.M. 1954-414 (BMNH); W. Java, Ind., Bogor, 3 males 8/9-XI-1977, 1 male 1 female 5/6-XII-1976, 1 female 27/28.XI.1976, P.H. v. DOESBURG, Mus. Leiden (RNH, JAL); Bogor, 1 male 26-X-1952, op licht, J.v. d. VECHT, Museum Leiden (RNH); Ngilrip, 850M, Central Java, 1 male 1 female Jan. 1936, E. le MOULT, Museum Leiden, det. as *Chilocoris ritsemæ* SIGN. (RNH); Soerabaja, 1 female XII-1922, P. BUITENDIJK, Museum Leiden (RNH); Madura, 1 male, Dr. H.J. VETH, Museum Leiden, det. as *Chilocoris ritsemæ* SIGN. (RNH); Sumatra, Bela Negri, Bahroe, 5 females 1 male, Dr. C.R. PFISTER, coll. Dr. D. MAC GILLAVRY (ZMA, JAL); Sumatra, Bindjei-Medan, 2 females, Dr. C.R. PFISTER, coll. Dr. D. MAC GILLAVRY (ZMA); Sumatra, Kepala Roessa Bindjei Deli, 1 female VIII-IX 1922, leg. L. J. TOXOPEUS 120 M, coll. Dr. D. MAC GILLAVRY (ZMA); Sumatra, Padang, 2 females 2 males 1922, J.J. de GROOL, coll. Dr. D. MAC GILLAVRY (ZMA, JAL), 1 female 3-4.IX.1934 (RNH); Sumatra, Manna, 1 female, M. KNAPPERT, Museum Leiden, det. as *Chilocoris ritsemæ* SIGN. (RNH); Z. Sumatra, Tandjoengakarang, 1 female IX-1949, C. v. NIDEK (ZMA); Sumatra, Bela Negri-Bahroe, 2 females, Dr. C.R. PFISTER, coll. Dr. D. MAC GILLAVRY (ZMA, JAL); Lohat, Zuid Sumatra, 1 male 10-II-1948, W.C. VERBOEM, Museum Leiden (RNH); Indonesia, Sitinjaulaut, alt. 1.000m, 25 km east from Padang, Sumatra, Barat, 1 male 21.VIII. 1977, Shinji NAGAI leg. (NSMT); Padang, Sumatra's Westkust, 1 male 2 M. 1926, leg. E. JACOBSON, Museum Leiden, det. as *Chilocoris ritsemæ* SIGN. (RNH); Indonesia, Luksag, 300m, Peleng Is., 1 female 24.II.-3.III.1986, S. NAGAI leg. (JAL); Indonesia, Puncak Palopo, ca. 1300m alt, S. Sulawesi, 1 female 3 Nov. 1985, S. NAGAI leg. (NSMT); Sulawesi Tengah, Nr. Morowali, Ranu River Area, 2 males 2 females 27.III.-20.IV.1980, M.J.D. BRENDILL, B.M. 1980-280 (BMNH); N. Sulawesi, Dumoga Bone NP, Malibagu Rd, 10km N of, alt. m ca 250, 1 male 6 females 02.IX.1985, J. HUIJBREGTS, sec growth, at light, RMNH/HH 437 (RNH, JAL); N. Sulawesi, Dumoga Bone NP, Base Camp, alt. m 210-211, 2 males 5 females 13-14.viii.1985, J. HUIJBREGTS, cult area, at light, RMNH/HH 410 (RNH, JAL); N. Sulawesi, Dumoga Bone NP, Mt. Mogogonipa, alt. m 1000, 1 female 22-25.viii.1985, J. HUIJBREGTS, multistr evergreen forest, at light, RMNH/HH 429 (RNH); N. Sulawesi, Dumoga Bone NP, Page Subcamp, alt. m 302, 1 male 0.3-0.6.ix.1985, J. HUIJBREGTS, multistr evergreen forest, at light, RMNH/HH 438 (RNH).

MALAYSIA: Johore, Kahang, 5 females 2 males 26.XI.1961, light trap, C.H. FERNANDO, B.M. 1964-68 (BMNH, JAL); Mardi, M. 13330, 1 male 23.7.84, Tax. Exphn., West Malaysia, Pahang, Bukit Ridan, M.V. light trap, C.I.E. Coll., A 17124 (BMNH); Neghi Sembilan, Malaya, Port Dickson, at light, 1 male 24.4.1935, 1 female 1 male 25.4.1935, 2 females 3.I.1935, H.M. PENDELBURY, F.M.S. Museum, Ex F.M.S. Museum, B.M. 1955-354 (BMNH); Pahang, Taman Negara, 1 male 1-13.III.1984, at light, L. JESSOP, B.M. 1984-230 (JAL); Telok Anson, Malaya, G. 2492, 3 females 4.5.1938, Entom. Div. Agric. Dept., light trap (BMNH, JAL).

DISTRIBUTION. - Malay Peninsula, Sumatra, Java, Madura, Sulawesi, Peleng. Recently recorded also from New Guinea (Lis, 1993c).

BIOLOGICAL DATA. - Numerous specimens have been collected at light in tropical evergreen forests, and in cultural lands.



***Chilocoris (Statanus) biliranus*, new species**

(figs. 135-136)

**DIAGNOSIS.** - The present species and both *C. sumatranus* and *C. vanstallei* differ from all other uniformly coloured species of the subgenus in having large eyes (ocular index 1.4-1.8), each lateral margin of the pronotum with 3 submarginal setigerous punctures, each paraclypeus submarginally with 5-6 pegs and 3 hair-like setae, and in the body length exceeding 3.0 mm. Males of the three species may be easily separated from each other by a shape of the paramere and the proctiger. Females of *biliranus* and *vanstallei* (female of *sumatranus* is unknown) differ slightly from each other in the body colouration and a puncturation of the posterior lobe of pronotum as shown in the key; nevertheless I'm aware that these characters may not be constant in both species and should not be treated as the ultimate key characters.

**DESCRIPTION.** - Body from yellowish brown to dark ochraceous, only sometimes castaneous.

Head dorsally impunctate, or with a few small almost indistinct punctures; clypeus as long as paraclypei, subapically with two pegs; each paraclypeus submarginally with a row of 5-6 pegs and 3-4 hair-like setae; eyes blackish brown or reddish brown, ocular index 1.47-1.62 (1.47-1.50 in male, 1.55-1.62 in female); ocelli yellowish brown or reddish brown, interocellar index 8.0-12.0; antennae and rostrum slightly paler than head; rostrum reaching middle of mesosternum.

Anterior lobe of pronotal disc almost impunctate, except for several punctures laterally; anteromedian part with oblong impressed line; posterior lobe with distinct same sized punctures; each lateral margin with 3 submarginal setigerous punctures.

Scutellum with 10-25 scattered distinct punctures slightly larger than or of the same size as those on pronotum.

Corium, especially in apical part, with punctures smaller and paler than those on pronotum and scutellum; clavus with one very short and one long row of punctures; mesocorium with two rows of punctures (one accompanied by incised line) paralleling clavo-corial suture, basal half with puncturation distinctly weaker than in the apical; exocorium almost impunctate, except for a row of punctures paralleling mesocorium, and several punctures in apical half; membrane semihyaline, yellowish brown or brown, surpassing the tip of abdomen.

Propleuron smooth and polished, depression with a few punctures.

Sternites impunctate, laterally with numerous light hairs.

Legs not specifically modified.

Paramere and proctiger as in figs. 135 & 136, respectively.

Measurements (male and female respectively): body length 3.41-4.02, 3.10-3.71; body width 1.80-2.15, 1.64-2.07; head length 0.64-0.72, 0.62-0.70; head width 0.89-1.01, 0.80-0.97; pronotum length 1.08-1.32, 0.91-1.27; pronotum width 1.76-2.12, 1.54-1.98; scutellum length 0.85-1.07, 0.85-1.02; scutellum width 1.10-1.34, 0.98-1.24; antennal segments 0.17-0.18 : 0.06-0.07 : 0.38-0.40 : 0.31-0.33 : 0.35-0.40; 0.16-0.18 : 0.06-0.07 : 0.35-0.36 : 0.28-0.31 : 0.35-0.39.

**TYPE MATERIAL EXAMINED**

Holotype male: [PHILIPPINES]: Biliran, Philippin., c. J. GUDIM (ZIP).

Paratypes: 2 females: [PHILIPPINES]: Biliran, Philippin., c. J. GUDIM (ZIP); 3 females: [PHILIPPINES]: Biliran, Philippin., STAUDINGER & BANG-HAAS (ZIP); 1 male 2 females: [PHILIPPINES]: Philipp., Biliran (JAL); 1 female: [PHILIPPINES]: Philipp., Polillo (JAL).

**DISTRIBUTION.** - Philippines.



***Chilocoris (Statanus) bosmansii*, new species**

(figs. 137-138)

**DIAGNOSIS.** - This species differs from any other within the subgenus (except *assmuthi* and *campbelli*) in the bicoloured body with corium distinctly paler than the pronotum and the scutellum. The new species differs from *C. (S.) assmuthi* in the uniformly coloured pronotum (posterior margin or at least umbones are of the same colour as the corium in *assmuthi*), and from *C. (S.) campbelli* in its punctured both scutellum and posterior lobe of the pronotum (pronotum and scutellum are almost impunctate in *campbelli*). Besides the three species can be easily separated from each other on the basis of genitalia.

**DESCRIPTION.** - Head castaneous, anterior part sometimes paler (even yellowish brown); entire dorsal surface impunctate, or with several punctures between eyes; clypeus as long as paraclypeum, subapically with two pegs; each paraclypeus with a row of 7-9 submarginal setigerous punctures (4-6 pegs and 2-3 hair-like setae); eyes reddish brown, ocular index 1.60-1.95; ocelli reddish brown, interocellar index 10.0-17.0; antennae brown or pale brown; rostrum yellowish brown, reaching middle of mesosternum.

Pronotum from light to dark castaneous, sometimes lateral and posterolateral parts distinctly paler, but never of the same colour as corium; disc with uninterrupted transverse line accompanied by numerous punctures; anterior lobe smooth or laterally with 1-3 punctures; posterior lobe with more than 20 punctures; each lateral margin with 3 submarginal setigerous punctures (fig. 137).

Scutellum darker than pronotum, with more than a dozen distinct punctures slightly larger than those on pronotum (fig. 137); apex and basal part impunctate.

Corium milky white or creamy, sometimes mesocorium almost translucent; clavus with few dark punctures forming a short row, and several colourless punctures; mesocorium with one row of dark punctures paralleling clavo-corial suture, the remaining part of mesocorium with colourless and almost indistinct punctures; exocorium with one row of dark punctures; costa dark, without setigerous punctures, lower side with numerous short hair-like bristles; membrane hyaline, broader and longer than abdomen.

Propleuron brown or yellowish brown; depression with a few punctures.

Sternites from pale brown to dark castaneous, smooth, with tiny punctures along sutures; lateral parts with numerous punctures bearing long hairs.

Legs yellow or yellowish brown, not specifically modified.

Paramere as in fig. 138.

Measurements (male and female respectively): body length 2.80-3.91, 2.93-4.02; body width 1.55-2.15, 1.66-2.27; head length 0.55-0.63, 0.61-0.68; head width 0.73-1.00, 0.74-1.01; pronotum length 0.92-1.29, 0.96-1.29; pronotum width 1.53-2.13, 1.63-2.23; scutellum length 0.77-1.10, 0.81-1.10; scutellum width 1.02-1.29, 1.06-1.39; antennal segments: 0.14-0.20 : 0.06-0.10 : 0.24-0.31 : 0.26-0.29 : 0.33-0.41, 0.15-0.16 : 0.07-0.13 : 0.24-0.30 : 0.27-0.32 : 0.34-0.42.

**TYPE MATERIAL EXAMINED**

**Holotype male:** [INDONESIA]: Sulawesi Utara, Tangkoko Nat. Park, Gunung Tangkoko (50m), 10-XI-1985, Station: 091; Project WALLACE, leg. R. BOSMANS & J. VAN STALLE, I.G. n°: 26.977; Coll. R.I.Sc.N.B. (IRSNB).

**Paratypes:** 1 male 3 females: [INDONESIA]: the same data as the holotype (IRSNB, JAL); 29 males and 27 females: [INDONESIA]: Sulawesi Tengah: Solato R., Taronggo, 1.45°S-121.40°E, 27-30.iii.1980, Forest floor litter, Lowland rain forest, M.J.D. BRENDALL, B.M. 1980-280 (BMNH, JAL).

**DISTRIBUTION.** - Sulawesi.

BIOLOGICAL DATA. - Majority of type specimens has been collected in a forest floor litter of lowland rain forest.

***Chilocoris (Statanus) campbelli*, new species**

(figs. 139-140)

DIAGNOSIS. - The species is closely related to *C. (S.) bosmansii*; nevertheless it can be easily separated from the latter by quite different puncturation of the posterior lobe of the pronotum and the scutellum (numerous distinct punctures in *bosmansii*, several almost indistinct punctures in *campbelli*), and by a shape of the paramere.

DESCRIPTION. - Head castaneous, dorsally impunctate; clypeus as long as paraclypei, subapically with two pegs; each paraclypeus with a row of 7 submarginal setigerous punctures (5 pegs and 2 hair-like setae); eyes dark reddish brown, ocular index 1.9; ocelli yellowish brown, interocellar index 10.0; antennae yellowish brown, 2nd segment basally darker; rostrum yellowish brown, reaching middle of mesosternum.

Pronotum of the same colour as head; transverse postmedian impressed line accompanied by several small punctures; anterior lobe impunctate, the posterior with a few almost indistinct punctures (fig. 139); each lateral margin with 3 submarginal setigerous punctures. Scutellum slightly darker than pronotum, disc with several scattered small punctures (fig. 139).

Corium yellowish white with brown punctures and dark brown apical parts of both exo- and mesocorium, lateral margins almost blackish brown; clavus with two rows of dark punctures; mesocorium, except the basal third, evenly punctured, with two rows of punctures paralleling clavo-corial suture (among them one accompanied by impressed line); exocorium impunctate, except for a row of punctures paralleling mesocorium; membrane translucent, broader than abdomen and distinctly surpassing its tip.

Propleuron castaneous, depression with several punctures close to coxae.

Abdomen castaneous, impunctate except for a row of small punctures close to each segmental suture, laterally with numerous short hairs.

Legs pale brown, not specifically modified. Paramere as in fig. 140.

Measurements (male only): body length 3.54; body width 1.80; head length 0.51; head width 0.83; pronotum length 1.05; pronotum width 1.78; scutellum length 0.95; scutellum width 1.17; antennal segments: 0.17 : 0.08 : 0.25 : 0.25 : 0.32.

TYPE MATERIAL EXAMINED

Holotype male: [INDIA]: Nandidrug, S. India, T.V. CAMPBELL, Ex Coll. E.A. BUTLER, B.M. 1926-171 (BMNH).

DISTRIBUTION. - South India.

***Chilocoris (Statanus) duffelsi*, new species**

(figs. 141-142)

DIAGNOSIS. - This species differs from any other within the subgenus (except *barbarae* and *pusillus*) in the corium of the same or almost the same colour as the pronotum and the scutellum, the body length not exceeding 3.0 mm, the postmedian transverse impressed line on the pronotum not prolonged laterally, each paraclypeus submarginally with 3 pegs and 3 hair-like setae, and the

submargins of the pronotum with 3 setigerous punctures. The species differs from *C. (S.) barbara*e in different puncturation of both the scutellum and the posterior lobe of pronotum (each with less than 20 punctures, hair-covering not distinct in *duffelsi*; each with more than 20 punctures bearing long distinct hairs in *barbara*e). From *C. (S.) pusillus* it can be separated by its ocular index (2.1-2.3 in *duffelsi*, 2.4-2.9 in *pusillus*), the body length (2.26-2.78 mm in *duffelsi*, 1.93-2.25 mm in *pusillus*), and a shape of the paramere (fig. 142).

**DESCRIPTION.** - Head brown or yellowish brown, dorsally smooth, with a few punctures between eyes only (fig. 141); clypeus as long as paraclypei, subapically with two pegs; each paraclypeus with a row of 6 submarginal setigerous punctures (3 pegs and 3 hair-like setae); eyes dark brown or blackish brown, ocular index 2.10-2.29; ocelli reddish brown, interocellar index 8.0-10.0; antennae yellowish or pale brown; rostrum of the same colour as antennae, reaching middle coxae.

Pronotum light brown or yellowish brown, with dark brown transverse uninterrupted impressed line accompanied by numerous punctures; anterior lobe smooth, laterally with 1-2 punctures bearing hairs; posterior lobe with 10-17 dark scattered punctures bearing short light hairs; each lateral margin with 3 submarginal setigerous punctures (fig. 141).

Scutellum of the same colour as pronotum; disc medially with several (10-15) punctures bearing short light hairs (fig. 141).

Corium of the same colour as or slightly paler than pronotum, with distinct dark rows of punctures (clavus - one, exocorium - one, mesocorium - one complete and one partial); mesocorial disc with several almost indistinct punctures; costa without setigerous punctures, lower margin with numerous short hair-like bristles; membrane hyaline, sometimes slightly browned, distinctly surpassing the tip of abdomen.

Pro-, meso- and metapleuron as in *C. (S.) barbara*e.

Abdomen smooth, light brown or yellowish brown; sternites laterally with short light hairs not as numerous as in *C. (S.) barbara*e.

Legs not specifically modified, yellowish brown or light brown, spines dark brown. Paramere as in fig. 142.

Measurements (male and female respectively): body length 2.36, 2.26-2.78; body width 1.30, 1.24-1.51; head length 0.45, 0.39-0.41; head width 0.57, 0.56-0.64; pronotum length 0.70, 0.68-0.84; pronotum width 1.26, 1.19-1.45; scutellum length 0.63, 0.60-0.74; scutellum width 0.73, 0.71-0.88; antennal segments: 0.13 : 0.05 : 0.24 : 0.24 : 0.31, 0.12-0.15 : 0.06-0.07 : 0.21-0.24 : 0.24-0.25 : 0.31-0.39.

#### TYPE MATERIAL EXAMINED

Holotype male: [INDONESIA]: Bindjei-Medan, Sumatra, Dr. C.R. PFISTER, coll. Dr. D. MAC GILLAVRY (ZMA).

Paratypes: 2 females: [INDONESIA]: the same data as the holotype (ZMA, JAL); 1 female: [INDONESIA]: L.J. TOXOPEUS, Buru, Station 9, 12 VI 21, virgin jungle; decaying leaves, coll. Dr. D. MAC GILLAVRY (ZMA); 1 female: [INDONESIA]: Sumatra, Perboeangan bij Medan, Dr. C.R. PFISTER, coll. Dr. D. MAC GILLAVRY (ZMA); 1 female: [MALAYSIA]: Johore, Kahang, 26.XI.1961, light trap, C.H. FERNANDO, B.M. 1964-68 (JAL).

**DISTRIBUTION.** - Indonesia (Sumatra, Buru), Malaysia (Malaya).

**BIOLOGICAL DATA.** - One of the type specimens has been collected from decaying leaves in a virgin jungle of the Buru island; the locality was a surroundings of the mountain-lake at 2350-2700 ft. (TOXOPEUS, 1924).

**ETYMOLOGY.** - The species is dedicated to Dr. J.P. DUFFELS (the Netherlands), the

eminent specialist on systematics and biogeography of the *Cicadoidea*.

***Chilocoris (Statanus) incomptus* FROESCHNER, new combination**  
(figs. 143-145)

*Chilocoris incomptus* FROESCHNER, 1967: 12.

**DIAGNOSIS.** - The uniformly coloured body, each paraclypeus submarginally with 1-2 pegs and 3 hair-like setae, and the submargins of the pronotum with 3 setigerous punctures will permit separation of this species from others in the subgenus.

**DESCRIPTION.** - Head from yellowish brown to dark brown, dorsally slightly wrinkled and with several punctures behind clypeus (fig.143); the latter as long as paraclypei, subapically with 2 pegs; each paraclypeus with 4-5 submarginal setigerous punctures (1-2 pegs close to clypeus, and 3 hair-like setae close to eye); eyes dark brown or reddish brown, ocular index 1.9-2.4 (male 1.9-2.2, female 2.0-2.4); ocelli orange or reddish brown, interocellar index 6.0-12.0; antennae somewhat paler than head; rostrum light brown, reaching anterior margin of middle coxae.

Pronotum of the same colour as head, with distinct uninterrupted transverse impressed line accompanied by punctures; anterior lobe with a few punctures anteromedially, and with 1-3 punctures laterally; posterior lobe sparsely punctured with distinct large punctures (fig. 144); each lateral margin with 3 submarginal setigerous punctures.

Scutellum of the same colour as pronotum, medially with distinct large dark punctures.

Corium of the same colour as pronotum and scutellum, sometimes only slightly paler; clavus with two rows of punctures (long and short); mesocorium with distinctly punctured, impressed line paralleling clavo-corial suture, and with numerous tiny punctures in apical half; exocorium with a row of distinct punctures (fig. 144); membrane yellowish, hyaline, distinctly broader than abdomen and surpassing its tip. Punctures on pronotum, scutellum and corium bear short, sometimes almost indistinct light hairs.

Propleuron polished, depression with a few punctures.

Sternites from pale to blackish brown, shining and impunctate with exception of a row of small punctures close to each sternal suture; lateral parts with short shining hairs. Legs yellowish brown or brown, not specifically modified.

Paramere as in fig. 145.

Measurements (male and female respectively): body length 2.11-2.52, 2.22-2.76; body width 1.12-1.31, 1.10-1.41; head length 0.36-0.43, 0.39-0.45; head width 0.51-0.60, 0.52-0.61; pronotum length 0.68-0.81, 0.61-0.89; pronotum width 1.10-1.31, 1.09-1.38; scutellum length 0.57-0.70, 0.61-0.76; scutellum width 0.64-0.80, 0.61-0.85; antennal segments 0.11-0.13 : 0.05-0.05 : 0.20-0.24 : 0.21-0.24 : 0.28-0.36; 0.10-0.11 : 0.04-0.06 : 0.19-0.23 : 0.21-0.23 : 0.29-0.33.

**TYPE MATERIAL EXAMINED**

Holotype female of *Chilocoris incomptus* FROESCHNER: [PHILIPPINES]: Philippines, Palawan, Brookes Point, Uring Uring, 14 August 1961, Noona Dan Exp. 61-62; caught by Mercury-light 19.00-21.00; Holotype, *Chilocoris incomptus* FROESCHNER 65 (ZMC).

**OTHER MATERIAL EXAMINED (13 males, 16 females)**

BRUNEI: 125 W m.v. light, Brunei, Temburong District, ridge NE of Kuala Belalong, approx. 300m alt, 1 male October 1992, J.H. MARTIN coll., B.M. 1999-172 (BMNH).

INDONESIA: E. Kalimantan, Camp Pemantus, 43km W of Sotek, 1 female 19. Dec. 1980, J. Aoki & H. HARADA (NSMT).

MALAYSIA: N. Borneo, 1 male Aug. 31st. 1927, Kudat, C.B.K. & H.M.P., F.M.S. Museum, Ex F.M.S. Museum, B.M. 1955-354 (BMNH); Sabah, 200ft, R. Karamuak, 7m, SSE Telupid, 2 females 1 male 1-7.IX.1977, M.E. BACCHUS, B.M. 1978-48 (BMNH, JAL); Borneo, Sabah, Danum Valley, 70km W Lahad Datu, M.J. & J.P. DUFFELS, Sungai Segama, W. side suspension bridge, 150m, 1 male 10.XII.1989, 1 female 11.XII.1989, understorey secondary growth/canopy, riverine rainforest, at light (ZMA, JAL); Borneo, Sabah, Danum Valley, 70km W Lahad Datu, M.J. & J.P. DUFFELS, Field Centre at Sungai Segama, above-staff-quarters, 150m, 1 female 5.XII.1989 (ZMA); Borneo, Sabah, 15km W Lahad Datu, 1 female 7.XII.1989, M.J. & J.P. DUFFELS, sample Sab. 61, cacao-plantation/acacia shadowtrees, at light (ZMA); Borneo, Sabah, Danum Valley, 70km W Lahad Datu, M.J. & J.P. DUFFELS, Next to bridge Nature Trail, 150m, 1 male 1 female 1.XI.1989, sample Sab. 50, rainforest along narrow stream, at light (ZMA, JAL); S. Sabah, Beaufort, 105km S of Long Pa Sia area, confluence Pa Sia-Matang, 4.24'N 115.43'E, 1 male 3 females 13 Apr. 1987, J. van TOLL & J. HUISMAN, At light, semicultivated area, 1000m asl, Near disturbed evergreen tropical rain forest, RMNH Leiden (RNH, JAL); Malaysia, Sabah, Long Pa Sia, Banks of S. Pa Sia, sec. veg., 4.25'N 115.43'E, 1090m, 1 male 14-28 Oct. 1986, J. HUISMAN, Museum Leiden (RNH); N. Borneo, Sabah, 10km SE Ranau, KG. Nalapak, Sg. Kananapun, ML-light, 116.47'E 5.58'N, 350m, 2 males 2 females 7 Feb. 1987/a, J. HUISMAN, Museum Leiden (RNH, JAL); Malaysia Sabah, Long Pa Sia. Airstrip along S. Pa Sia, 4.25'N 115.43'E, 1090m, 1 female 14 Oct. 1986, J. HUISMAN et al., Museum Leiden (RNH); E. Sabah, Lahat Datu, 60km W of: Danum Valley, Field Centre at junction Sg. Segama and Sg. Palum Tambun, 150m, 4.58'N 117.48'E, at light, Bridge of Segama, 1 male 19 Mar 1987, 18.30-21.30, clearing, edge of untouched evergr. lowl. rainforest, leg. van TOLL & HUISMAN, RMNH Leiden (RNH).

PHILIPPINES: Philippines, Mt. Maquiling, alt. 400m, Laguna Prov., Luzon, 1 female 12.IX.1985, K. ISHIKAWA, Tullgren sample of fallen fruit of *Ficus* sp. (NSMT); Philippines, Luan, alt. 50m, S. Cotabato Prov., Mindanao, 1 male 2 females 13.VIII.1985, K. ISHIKAWA leg., Tullgren sample of leaf litter in natural forest (NSMT, JAL); Philippines, Languan, 10m, N. Palawan Is., 1 male 26.VIII.1985, M. TOMOKUNI (JAL); Palawan, Olanguan (Om), 76km N. of Puerto Princesa, 1 male 26.VIII. 1985, M. SAKAI leg. (NSMT).

DISTRIBUTION. - Philippines, Borneo (Brunei, Sarawak, Sabah, Kalimantan).

BIOLOGICAL DATA. - One specimen has been collected from a fallen fruit of *Ficus* sp., the other from a leaf litter in natural tropical forest. Numerous specimens have been collected at light in different types of vegetation (secondary growth, cacao plantation/acacia shadowtrees, semicultivated area, disturbed evergreen rain forest).

***Chilocoris (Statanus) piceus* SIGNORET, new combination**  
(figs. 146-147)

*Chilocoris piceus* SIGNORET, 1884a: 518; ATKINSON, 1887: 58; LETHIERRY & SEVERIN, 1893: 76 [part]; DISTANT, 1902: 105; STICHEL, 1962: 777 [part]; HSIAO et al., 1977: 44; JOSIFOV & KERZHNER, 1978: 191.

Misidentifications: HORVÁTH, 1889: 327; STICHEL, 1962: 777 [part].

DIAGNOSIS. - This species can be separated from all other species within the subgenus (except *pseudopiceus*) by a set of the following characters: the corium of the same colour as the pronotum and the scutellum; the ocular index from 2.1 to 2.7; each paraclypeus submarginally with a row of 5-6 pegs and 3 hair-like setae; each lateral margin of the pronotum with 3 submarginal setigerous punctures. The species differs from *C. (S.) pseudopiceus* in a body colour (yellowish brown to dark brown in *piceus*, blackish brown in *pseudopiceus*), a puncturation of the posterior lobe of the pronotal disc (numerous dark punctures in *piceus*, impunctate or with several almost indistinct punctures in *pseudopiceus*), and in a shape of the paramere and the proctiger.

DESCRIPTION. - Body from yellowish brown or ochraceous to dark brown.

Head dorsally impunctate, except for a few punctures between eyes; clypeus as long as paraclypei, subapically with two pegs; each paraclypeus with a row of 8-9 submarginal setigerous punctures (5-6 pegs and 3 hair-like setae); eyes



castaneous or brownish black, ocular index 2.10-2.70; ocelli reddish brown, interocellar index 9.0-13.0; antennae from yellowish brown to brown; rostrum pale brown or brown, reaching middle of mesosternum.

Pronotum with postmedian transverse impressed line accompanied laterally by several punctures; anterior lobe smooth with exception of 1-3 dark punctures anteromedially, and 1-2 punctures laterally, shallow rounded subapical depression may be present in male specimens; posterior lobe with 16-20 irregularly scattered dark punctures; each lateral margin with 3 submarginal setigerous punctures.

Scutellum of the same colour as pronotum, disc medially with more than 10 dark punctures larger than those on pronotum; basal part and apex impunctate.

Corium of the same colour as pronotum, or somewhat slightly more yellowish, dark punctures smaller than those on scutellum and pronotum; clavus with punctures forming two short rows; exocorium with one row of punctures; mesocorium with two rows of punctures paralleling clavo-corial suture, among them one accompanied by impressed line; the remaining part (with exception of basal parts of exo- and mesocorium) distinctly evenly punctured; some punctures, especially those in lateral parts bear short hairs (less visible than those in both *C. (S.) barbarae* and *C. (S.) duffelsi*); membrane hyaline, slightly browned, longer and broader than abdomen.

Propleuron yellowish brown or brown, smooth, depression with a few punctures.

Abdomen yellowish brown or brown, with small punctures along the sutures; lateral parts with numerous short hairs and long hair-like setae.

Legs yellowish brown, pale brown or brown, spines castaneous or dark brown.

Paramere as in fig. 146; proctiger as in fig. 147.

Measurements (male and female respectively): body length 2.52-3.34, 2.68-3.12; body width 1.36-1.71, 1.49-1.55; head length 0.42-0.54, 0.42-0.43; head width 0.63-0.77, 0.68-0.70; pronotum length 0.80-1.05, 0.87-0.91; pronotum width 1.33-1.68, 1.47-1.48; scutellum length 0.70-0.85, 0.74-0.76; scutellum width 0.81-0.99, 0.93-0.94; antennal segments: 0.11-0.15 : 0.07-0.13 : 0.18-0.29 : 0.21-0.29 : 0.28-0.35, 0.12-0.14 : 0.06-0.10 : 0.18-0.31 : 0.25-0.28 : 0.29-0.34.

#### MATERIAL EXAMINED (13 males, 21 females)

INDIA: Calcutta, 1 female, det. as *piceus* SIGN., det. HORVÁTH (HNHM); Chipurupalle, Vizagapatam Distr., India, R.S. Patuck, 3 females 2 males, B.M. 1923-430 (BMNH, JAL); South India, Coimbatore, 1 male 20.IX.13, FLETCHER Coll., at light (BMNH); India, Madras State, 1400 ft, Coimbatore, P. Susai NATHAN, 1 male IV-1962, 1 female X.1972, Museum Leiden (RNH); S. India, Malabar, Walayar Forests, 1000ft, 1 female 1 male X-1956, Rec. P.S. NATHAN (JAL); Nilgiri, Coonoor, 1 female, M. MAINDRON 1902, Muséum Paris (MNHN); Coromandel, Genji, 1 female, M. MAINDRON 1902, Muséum Paris (MNHN); South India, Kerala State, Trivandrum Dist., Poonmundi Range, 3000 ft., 2 males 2 females VII.89, T.R.S.N. Coll. (CWS, JAL); S. India, Mysore, Chikballapur, 2 males 5 females, T.V. CAMPBELL, B.M. 1930-599 (BMNH, JAL); India, Madras Airport, 1 female V-1962, P. Susai NATHAN (RNH).

SRI LANKA: Trincomalee, Ceylon, 1 female XI-06 (BMNH); Negombo, Ceylon, 1 female 25-27-II-1952, L.D. BRONGERSMA, Museum Leiden (RNH); Ceylon, Sabaragamuwa Prov., At light, Ratnapura, 2 males 2 females 22.II.62, Loc. 95, In light trap, Lund University Ceylon Expedition 1962, BRINCK-ANDERSSON-CEDERHOLM, Brit. Mus. 1970-706 (BMNH, JAL).

MALAYSIA: Mardi, 1 female 2 males 24.7.84, 1 female 25.7.84, Tax. Expdn., West Malaysia, Pahang, Bukit Ridan, M13381, M13441, M13557, C.I.E. Coll., A. 17124 (BMNH, JAL).

DISTRIBUTION. - China, India, Sri Lanka, Malaya. The record from Japan (TOMOKUNI, 1979) is most probably based on a misidentification.

REMARKS. - The type material of *Chilocoris piceus* SIGNORET has not been found.



***Chilocoris (Statanus) pseudopiceus*, new species**

(figs. 148-149)

**DIAGNOSIS.** - The best characters separating this species from any other species of the subgenus (except *piceus*) are, as follows: the corium of the same colour as the pronotum and the scutellum; each paraclypeus submarginally with 4-5 pegs and 3 hair-like setae; each lateral margin of the pronotum with 3 submarginal setigerous punctures; the ocular index ranging from 2.3 to 2.5. The species differs from *C. (S.) piceus* in a puncturation of the posterior lobe of the pronotum, the body colour and a shape of the genitalia (see the diagnosis to *C. piceus*).

**DESCRIPTION.** - Body blackish brown, shining.

Head dorsally slightly wrinkled, impunctate except for 1-3 small punctures between eyes; clypeus as long as paraclypei, subapically with two pegs; each paraclypeus submarginally with a row of 4-5 pegs and 3 hair-like setae; eyes blackish brown, ocular index 2.30-2.50; ocelli reddish brown, interocellar index 5.0-7.5; antennae dark brown with apices of segments paler; rostrum brown reaching middle of mesosternum.

Pronotum with postmedian transverse impressed line accompanied by small colourless punctures; anterior lobe impunctate, except for a few punctures laterally; male with shallow subapical rounded impression; posterior lobe with 5-11 punctures irregularly scattered over entire surface; each lateral margin with 3 submarginal setigerous punctures.

Scutellum distinctly punctured with 8-16 punctures, larger and more distinct than those on pronotum.

Corium with distinct punctures slightly smaller than those on scutellum; clavus with two rows of punctures; mesocorium apically densely punctured, one distinct and one almost indistinct row of punctures parallel clavo-corial suture; exocorium impunctate, except for a row of punctures bearing short almost indistinct hairs; membrane hyaline, sometimes browned, extending beyond the tip of abdomen.

Propleuron smooth and polished, depression with a few punctures.

Abdomen blackish brown or dark brown, polished, laterally with distinct shining hairs; each segmental suture with a row of small punctures.

Legs not specifically modified.

Paramere as in fig. 148; proctiger as in fig. 149.

Measurements (male and female respectively): body length 2.85-3.07, 3.05-3.06; body width 1.61-1.68, 1.56-1.71; head length 0.47-0.49, 0.45-0.49; head width 0.73-0.76, 0.68-0.74; pronotum length 0.90-0.96, 0.81-0.90; pronotum width 1.58-1.62, 1.51-1.63; scutellum length 0.87-0.88, 0.83-0.85; scutellum width 1.00-1.02, 0.93-1.01; antennal segments 0.17-0.19 : 0.09-0.11 : 0.22-0.25 : 0.28-0.29 : 0.36-0.39; 0.15-0.17 : 0.07-0.10 : 0.21-0.25 : 0.25-0.27 : 0.36-0.37.

**TYPE MATERIAL EXAMINED**

Holotype male: [NEPAL]: 334 Taplejung Distr., Worebung Pass, degraded broad leaved forest, 2000m, 21 Apr 1988, J. MARTENS & W. SCHAWALLER leg. (JMC).

Paratypes: 1 female: [NEPAL]: the same data as the holotype (JMC); 1 male 1 female: [NEPAL]: 412 Sankhua Sabha Distr., Arun Valley betw. Mure and Hure, mixed broad-leaved forest, 2050-2150m, 9-17 June 88, MARTENS & SCHAWALLER leg. (JMC, JAL).

**DISTRIBUTION.** - Nepal.

**BIOLOGICAL DATA.** - The type specimens have been collected in mixed forests.

***Chilocoris (Statanus) pusillus* HORVÁTH, new combination**

(figs. 150-152)

*Chilocoris pusillus* HORVÁTH, 1919: 262; ESAKI, 1926: 142; FROESCHNER, 1976: 235.

**DIAGNOSIS.** - This species is best diagnosed by a set of the following characters: the corium of the same colour as the pronotum and the scutellum; the hair-covering not dense; the body length about 2 mm (1.93-2.25); the ocular index 2.4-2.9; each paraclypeus submarginally with 3-4 pegs and 3 hair-like setae; each lateral margin of the pronotum submarginally with 3 setigerous punctures; both the scutellum and the posterior lobe of pronotum scarcely punctured. *C. (S.) pusillus* is related to *C. (S.) duffelsi*, but can be easily distinguished from the latter by the shorter body, the smaller eyes and almost indistinct dorsal hair-covering.

**DESCRIPTION.** - Head light brown or brown, dorsally smooth with a few punctures between eyes (fig. 150); clypeus as long as paraclypei, subapically with two pegs; each paraclypeus with a row of 6-7 submarginal setigerous punctures (3-4 pegs and 3 hair-like setae); eyes brown, ocular index 2.40-2.90; ocelli yellowish brown, interocellar index 5.0-6.0; antennae light brown or yellowish brown; rostrum of the same colour as antennae or somewhat paler, reaching middle coxae.

Pronotum yellowish brown or brown; disc with dark postmedian transverse impressed line accompanied by distinct punctures (fig. 151); anterior lobe laterally with a few punctures; posterior lobe with 10-13 well separated punctures; each lateral margin with 3 submarginal setigerous punctures.

Scutellum of the same colour as pronotum, disc with 12-14 well separated punctures.

Corium of the same colour as pronotum and scutellum; clavus with two short rows of punctures; mesocorium with two complete rows of punctures paralleling clavo-corial suture, the first of these additionally connected by a line (fig. 151); apical part of mesocorium with tiny punctures bearing almost indistinct short hairs; exocorium with one row of punctures bearing short hairs; membrane browned, semihyaline, broader and longer than abdomen.

Propleuron pale brown, polished and smooth, depression with few punctures.

Sternites brown or dark brown, smooth, with a few punctures along sutures and laterally with scattered punctures bearing long hairs.

Legs brown or yellowish brown, not specifically modified.

Paramere as in fig. 152.

Measurements (male only): body length 1.93-2.25; body width 1.03-1.28; head length 0.38-0.48; head width 0.43-0.57; pronotum length 0.60-0.76; pronotum width 1.01-1.26; scutellum length 0.54-0.64; scutellum width 0.62-0.78; antennal segments: 0.11-0.12 : 0.06-0.07 : 0.18-0.20 : 0.18-0.19 : 0.28-0.29.

**TYPE MATERIAL EXAMINED**

Lectotype male of *Chilocoris pusillus* HORVÁTH (present designation): [CHINA]: Formosa, SAUTER; Takao 1907; male; *pusillus* HORV. det. HORVÁTH; Lectotype, *Chilocoris pusillus* HORV., labelled by R.C. FROESCHNER 59 (HNHM).

Paralectotype male: [CHINA]: Formosa, SAUTER; Gyamma 4.VI.907; male; *pusillus* HORV. det. HORVÁTH; *Chilocoris pusillus* (HNHM).

**OTHER MATERIAL EXAMINED (1 male)**

VIETNAM: Tonkin, Rég. de Hoa Binh, 1 male, A. de COOMAN 1930, Museum Paris (MNHN).

**DISTRIBUTION.** - China (Taiwan), Vietnam.

Introduced also to Hawaii (FROESCHNER, 1976).

***Chilocoris (Statanus) sulcatus*, new species**

(fig. 153)

**DIAGNOSIS.** - The species may be easily recognized within the subgenus by the pronotal postmedian impressed line prolonged laterally towards the posterolateral angles coupled with the presence of 4-5 submarginal setigerous punctures on each lateral margin of the pronotum.

**DESCRIPTION.** - Body dark castaneous, shining.

Head dorsally smooth with several small punctures between ocelli; clypeus tapering apicad, slightly shorter than paraclypei, subapical with two pegs; each paraclypeus submarginally with a row of 5 long pegs and 3 long hairs; eyes reddish brown, ocular index 2.33; ocelli reddish brown, interocellar index 3.2; antennae brown; rostrum brown reaching middle of mesosternum.

Pronotum with postmedian transverse impressed line prolonged laterally towards posterolateral angles (fig. 153); anterior lobe laterally with several distinct punctures, the posterior with numerous (more than 50) punctures bearing short shining hairs; each lateral margin with 4-5 submarginal long setae.

Scutellum with numerous (more than 40) punctures bearing short shining hairs.

Corium with puncturation weaker than that of both pronotum and scutellum; clavus with a few scattered punctures, and one distinct row of punctures; meso- and exocorium with small almost invisible punctures, except for distinct impressed row of punctures paralleling clavo-corial suture; membrane semihyaline, brown, broader than abdomen and distinctly surpassing its tip.

Propleuron with a few punctures in depression.

Abdomen smooth, each segment laterally and posteriorly with small punctures bearing short shining hairs.

Measurements (male only): body length 3.81; body width 2.12; head length 0.71; head width 0.92; pronotum length 1.07; pronotum width 2.07; scutellum length 1.10; scutellum width 1.34; antennal segments: 0.24 : 0.10 : 0.31 : 0.29 : 0.42.

**TYPE MATERIAL EXAMINED**

**Holotype male:** [MALAYSIA]: Sabah, Mt. Kinabalu, Bukit Ular Trail, alt. m 1800, 7-11.xi., ex coll. R. HOLYNSKI (JAL).

**DISTRIBUTION.** - North Borneo (Sabah).

***Chilocoris (Statanus) sumatranus*, new species**

(figs. 154-155)

**DIAGNOSIS.** - The species is known only from the holotype male and therefore a shape of the genitalia is the best character for separating this species from others within the subgenus. Additional features which may help in distinguishing this species are, as follows: the ocular index about 1.7, each lateral margin of the pronotum with 3 submarginal setigerous punctures, each paraclypeus submarginally with a row of 5 pegs and 3 hair-like setae, and the corium of the same colour as the pronotum and the scutellum.

**DESCRIPTION.** - Body dark castaneous, shining, scutellum slightly darker than pronotum.

Head dorsally somewhat wrinkled and with a few small punctures between eyes; clypeus as long as paraclypei, subapically with two pegs; each paraclypeus with a row of 8 submarginal setigerous punctures (5 pegs and 3 hair-like setae); eyes

dark reddish brown, ocular index 1.72; ocelli reddish brown, interocellar index 10.0; antennae brown; rostrum brown reaching middle of mesosternum.

Anterior lobe of pronotum laterally with a few distinct punctures, the posterior with numerous (more than 40) large dark punctures; postmedian transverse impressed line with several punctures; each lateral margin with 3 submarginal setigerous punctures.

Scutellum with more than 30 distinct punctures of the same size as those on pronotum.

Corium with punctures distinctly smaller than those on scutellum; clavus with one long and one short row of punctures; exocorium impunctate except for a row of punctures parallel to mesocorium, mesocorial disc basally impunctate, apically densely punctured, two rows of punctures (one distinct, one partial) parallel clavo-corial suture; membrane hyaline, slightly browned, broader than abdomen and surpassing its tip.

Propleuron yellowish brown, depression with a few scattered punctures close to coxae.

Lateral parts of abdomen with numerous short hairs.

Legs not specifically modified.

Paramere as in fig. 154; proctiger as in fig. 155.

Measurements (male only): body length 3.95; body width 2.19; head length 0.62; head width 0.96; pronotum length 1.29; pronotum width 2.09; scutellum length 1.07; scutellum width 1.34; antennal segments: 0.17 : 0.06 : 0.31 : 0.31 : 0.35.

#### TYPE MATERIAL EXAMINED

Holotype male: [INDONESIA]: Fort de Kock (Sumatra), 920M, 1924, ex coll. R. HOLYNSKI (JAL).

DISTRIBUTION. - Sumatra.

### ***Chilocoris (Statanus) vanstallei*, new species**

(figs. 156-158)

DIAGNOSIS. - This new species is best diagnosed by a set of the following characters: the body length from 3.05 to 3.95; the ocular index about 1.50-1.75; each paraclypeus submarginally with a row of 5-6 pegs and 3 hair-like setae; each lateral margin of the pronotum with 3 submarginal setigerous punctures; the corium of the same colour as the pronotum and the scutellum. The species is closely related to *C. (S.) sumatranus* and *C. (S.) biliranus* (for distinguishing characters see the diagnosis to the latter species).

DESCRIPTION. - Body (fig. 156) from castaneous to dark castaneous, only exceptionally dark ochraceous.

Head dorsally smooth, sometimes with several punctures forming U-shaped row posterior to clypeus; the latter as long as or slightly longer than paraclypei, subapically with two pegs; each paraclypeus with a row of 8-9 submarginal setigerous punctures (5-6 pegs and 3 hair-like setae); eyes dark castaneous or blackish brown, ocular index 1.50-1.75; ocelli reddish brown, interocellar index 7.0-8.0; antennae brown; rostrum yellowish brown or brown, reaching at best anterior margin of middle coxae.

Pronotal postmedian transverse impressed line with punctures, especially in lateral parts; anterior lobe smooth, laterally with several punctures, calli divided by impressed line reaching almost the middle of anterior lobe; posterior lobe with distinct numerous both large and tiny punctures; each lateral margin with 3

submarginal setigerous punctures.

Scutellum with distinct punctures as large as those on pronotum.

Corium with distinct small punctures; clavus with two rows of punctures (long and short); mesocorium with two rows of punctures paralleling clavo-corial suture, apical part with numerous punctures distinctly smaller than those on scutellum; exocorium with one row of punctures; costa without setigerous punctures, lower margin with numerous short hair-like bristles; membrane brown, broader than abdomen and surpassing its tip.

Propleuron brown or yellowish brown, smooth and polished; depression darker than convexities, and with a few punctures.

Sternites from castaneous to blackish brown, smooth; lateral and posterior margins of segments with numerous short brown hairs.

Legs not specifically modified.

Paramere as in fig. 157, proctiger as in fig. 158.

Measurements (male and female respectively): body length 3.17-3.54, 3.05-3.95; body width 1.73-1.98, 1.68-2.13; head length 0.59-0.70, 0.61-0.68; head width 0.83-0.98, 0.85-1.05; pronotum length 0.90-1.01, 0.90-1.16; pronotum width 1.63-1.93, 1.66-2.06; scutellum length 0.85-0.98, 0.82-1.05; scutellum width 1.02-1.17, 1.02-1.27; antennal segments 0.14-0.18 : 0.06-0.08 : 0.31-0.35 : 0.28-0.31 : 0.36-0.38; 0.14-0.17 : 0.07-0.08 : 0.29-0.35 : 0.29-0.31 : 0.35-0.38.

#### TYPE MATERIAL EXAMINED

Holotype female: [INDONESIA]: Sulawesi Utara, Tangoko Nat. Park, Gunung Tangkoko (50m), 10-XI-1985, Station: 091; Project WALLACE, leg. R. BOSMANS & J. VAN STALLE, I.G. n°: 26.977, Coll. R.I.Sc.N.B. (IRSNB).

Paratypes: 1 male 5 females: [INDONESIA]: the same data as the holotype (IRSNB, JAL); 3 males 3 females: [INDONESIA]: RMNH/pw68a, C. Sulawesi, Palu region, Tawaeli-Tomboli rd, alt. m 0250, 20-22.xii.1985, J. KRIKKEN, forest/coffee, nr rivulet, 2 human excr traps (RNH, JAL); 2 males: [INDONESIA]: Indonesia, Sulawesi Utara, Dumoga-Bone N.P., February 1985, R. Ent. Soc. Lond., Project Wallace, B.M. 1985-10, Lowland forest 200-300m (BMNH, JAL).

DISTRIBUTION. - Sulawesi.

BIOLOGICAL DATA. - The type specimens have been collected mostly in a lowland forest (200-300m a.s.l.), some from the "human excr traps" near a rivulet.

### ***Chilocoris (Statanus) wallacei*, new species**

(figs. 159-160)

DIAGNOSIS. - The presence of a single submarginal setigerous puncture on each lateral margin of the pronotum coupled with the presence of a row of 5-6 pegs and 3 hair-like setae on each paraclypeus mark this species as distinct within the subgenus.

DESCRIPTION. - Body from brown to dark castaneous, shining.

Head dorsally smooth, sometimes slightly wrinkled and with a few punctures between eyes; clypeus as long as paraclypei, subapically with 2 pegs; each paraclypeus submarginally with a row of 5-6 pegs and 3 hair-like setae; eyes from reddish brown to dark castaneous, ocular index 1.78-2.00; ocelli yellowish brown or reddish brown, interocellar index 5.0-7.0; antennae pale brown or brown; rostrum of the same colour as antennae, reaching middle of mesosternum.

Pronotal postmedian transverse impressed line bearing several small punctures; anterior lobe laterally with 1-5 punctures, the posterior with numerous scattered distinct punctures; each lateral margin with a single submarginal setigerous

puncture situated on the posterior lobe (one aberrant specimen bears two setigerous punctures).

Scutellum with 8-20 punctures slightly larger than those on pronotum, anteromedian part of disc usually impunctate.

Clavus with one distinct and one almost indistinct row of punctures; mesocorium in apical two thirds densely punctured, two rows of punctures (one accompanied by a line) parallel to clavo-corial suture; exocorium almost impunctate, with a row of punctures paralleling mesocorium; almost all punctures on corium distinctly smaller than those on scutellum; membrane brown, semihyaline, broader than abdomen and distinctly surpassing its tip.

Propleuron with a few punctures in depression.

Abdomen alutaceous, almost smooth, laterally with numerous long shining hairs.

Legs pale brown or brown, not specifically modified.

Paramere as in fig. 159, proctiger as in fig. 160.

Measurements (male and female respectively): body length 3.17-4.07, 3.00-4.51; body width 1.73-2.05, 1.51-2.39; head length 0.52-0.67, 0.53-0.73; head width 0.72-0.89, 0.66-1.00; pronotum length 0.90-1.15, 0.83-1.32; pronotum width 1.56-2.00, 1.44-2.26; scutellum length 0.85-1.07, 0.81-1.15; scutellum width 1.00-1.22, 0.93-1.37; antennal segments 0.12-0.17 : 0.04-0.07 : 0.28-0.34 : 0.27-0.32 : 0.38-0.45; 0.14-0.20 : 0.05-0.07 : 0.31-0.38 : 0.24-0.34 : 0.35-0.41.

#### TYPE MATERIAL EXAMINED

Holotype male: [INDONESIA]: Indonesia, Sulawesi Utara, Gng. Ambang F.R., nr. Kotamobagu, Jan. 1985, Leaf litter, R. Ent. Soc. Lond., Project WALLACE, B.M. 1985-10 (BMNH).

Paratypes: 8 males 3 females : [INDONESIA]: the same data as the holotype (BMNH, JAL); 2 males 3 females: [INDONESIA]: RMNH/HH428, N. Sulawesi, Dumoga Bone NP, Mt. Mogogonipa, alt. m 1000, 22-26.viii.1985, J. HUIJBREGTS, multistr evergreen forest, window trap (RNH, JAL); 1 female: [INDONESIA]: Sulawesi Utara, Dumoga-Bone Nat. Park, Poniki Trail (1600m), X-1985, Station: 029 (JAL); 1 female: [PHILIPPINES]: (Philippines), Upper Barakatan, 1,100m, Apo Range, Mindanao Is., 6.VIII.1985, Y. NISHIKAWA (NSMT).

DISTRIBUTION. - North Sulawesi, South Philippines (Mindanao).

BIOLOGICAL DATA. - The available data show that the species lives probably in a leaf litter of evergreen tropical forests at the altitude of 1000-1600 m a.s.l.

### Genus *Cydnopeltus* SIGNORET

*Cydnopeltus* SIGNORET, 1882a: XXVIII.

*Cydnopeltus* SIGNORET, 1883e: 359, objective synonym of *Cydnopeltus* SIGNORET, 1882.

DIAGNOSTIC CHARACTERS. - The genus is very similar to *Cydnus* F. in a body outline and in a shape of the evaporatoria and the peritreme. Nevertheless it can be easily distinguished from the latter by the presence of numerous parallel grooves on the anterior convexity of the propleuron, and the paraclypei not joined in a front of the clypeus.

DESCRIPTION. - Body black or blackish brown.

Clypeus bearing two hair-like setae at one third of its length from the apex; paraclypei not joined in front of clypeus, each paraclypeus with 2-4 submarginal setigerous punctures bearing long hair-like setae; eyes small, round, slightly protruding; ocelli present; antennae 5-segmented.

Pronotum broader than long, convex, disc with more or less distinct postmedian transverse impression bearing punctures; anterior and posterior lobe usually



almost impunctate; umbones not swollen; each lateral margin with a row of submarginal long hair-like setae.

Scutellum triangular, broader than long, basal and lateral rows of punctures more or less conspicuous, disc punctured, apex broad.

Corium divided into clavus, meso- and exocorium; costa with at least 1 setigerous puncture; membranal suture bisinuated, membrane normally developed, not reduced.

Propleural depression deep, anterior convexity with numerous parallel grooves; evaporatorium on mesopleuron not subquadrate, covering two thirds of the segment; polished part of peritreme broad without posteriorly curved rounded lobe.

Anterior tibiae widened; middle and posterior tibiae dorsally flattened; all tibiae armed in strong stout spines.

TYPE OF GENUS. - *Cydnopeltus horvathii* SIGNORET, 1882, by monotypy; of *Cydnopeltus* SIGNORET, 1883, *Cydnopeltus horvathi* SIGNORET, 1883, by monotypy.

REMARK. - At present the genus contains four Oriental species; a key for their determination is based mainly on the shape of male genital structures, since no female is known for *C. horvathii* and *C. luzonicus*.

#### Key to species of *Cydnopeltus*

1. Costa with 2-3 setigerous punctures; lower margin of male genital capsule with broadly rounded process (fig. 175) . . . . . *sulawesicus* (p. 99)
- Costa with 1 setigerous puncture; lower margin of male genital capsule with process of another shape (figs. 163, 170, 173) . . . . . 2.
2. Postmedian transverse impression on pronotum deep, bearing distinct row of crowded punctures (fig. 167); lower margin of male genital capsule with bilobed process (fig. 170) . . . . . *incisus* (p. 96)
- Postmedian transverse impression on pronotum shallow, sometimes indistinct, bearing only a few punctures, a row of punctures if present usually interrupted medially; lower margin of male genital capsule with either blunt or sharp process (figs. 163, 173) . . . . 3.
3. Opening of male genital capsule with three small teeth on upper margin (fig. 172), lower margin of male genital capsule with sharp process (fig. 173). . . . . *luzonicus* (p. 98)
- Opening of male genital capsule with one large rounded tooth on upper margin (fig. 164), lower margin of male genital capsule with blunt process (fig. 163) . . . . . *horvathii* (p. 95)

#### ***Cydnopeltus horvathii* (SIGNORET)**

(figs. 162-165)

*Cydnopeltus Horvathii* SIGNORET, 1882a: XXVIII.

*Cydnopeltus Horvathi* SIGNORET, 1883e: 360; LETHIERRY & SEVERIN, 1893: 74, objective synonym of *Cydnopeltus horvathii* SIGNORET, 1882.

DIAGNOSIS. - Among those species of the genus bearing the single setigerous puncture on the costa, this one is best diagnosed by the shape of the male genital capsule and its opening, as shown in the key. Besides, the species differs from the others in having a transverse postmedian impression on the pronotum interrupted medially and bearing only a few punctures in a row.

DESCRIPTION. - Head black or blackish brown, dorsally densely punctured with

exception of clypeus, anterior part of paraclypei and a surface behind ocelli; clypeus slightly shorter than paraclypei, two hair-like setae present at one third from the apex; each paraclypeus with 2-4 submarginal hair-like setae; eyes brown, ocular index 3.76-4.50; ocelli brown, interocellar index 2.1-2.3; antennae dark brown; rostrum brown, surpassing middle coxae or reaching the posterior.

Pronotum black or blackish brown, disc almost impunctate; transverse postmedian impression shallow, only with a few punctures; each lateral margin with a row of 6-7 submarginal setigerous punctures.

Scutellum dark castaneous or blackish brown, disc with distinct large well separated punctures; apex and anterolateral angles impunctate.

Corium dark castaneous or blackish brown, sometimes exocorium partly pale brown; clavus with two rows of punctures; mesocorium basally evenly punctured with punctures smaller than those on scutellum, apically almost impunctate, two distinct rows of punctures parallel clavo-corial suture, one parallels exocorium; exocorium with two rows of punctures paralleling mesocorium; costa with one setigerous puncture; membrane brown, only slightly surpassing the tip of abdomen.

Propleural depression with several punctures, anterior convexity with numerous parallel grooves; evaporatoria typical of the genus.

Sternites polished, laterally with coarse punctures. Legs blackish brown.

Paramere as in fig. 162; genital capsule as in figs. 163-164; proctiger as in fig. 165.

Measurements (male only): body length 5.04-6.65; body width 2.78-3.17; head length 1.11-1.32; head width 1.40-1.68; pronotum length 1.85-2.02; pronotum width 2.71-3.15; scutellum length 1.37-1.78; scutellum width 1.73-2.05; antennal segments: 0.32-0.42 : 0.28-0.38 : 0.43-0.49 : 0.60-0.70 : 0.77-0.90.

#### TYPE MATERIAL EXAMINED

Lectotype male of *Cydnopeltus horvathii* SIGNORET (present designation): [INDONESIA]: Java, XANTHUS; 4; *Horvathi* typ. SIGN. (HNHM).

#### OTHER MATERIAL EXAMINED (4 males)

INDONESIA: Java, XANTHUS, 4, 1 male, det. as *Horvathi*, det. HORVÁTH (HNHM); Java, Palabuan, 1 male (JAL); Ost Bali, Kintamani, 1 male, E. STRESEMENN (BMNH); G. Tangkoeban Prahoe, 4000-5000 Voet, Preanger, Java, 1 male VIII. 1937, F.C. DRESCHER, det. as *Cydnopeltus horvathi* SIGN., Museum Leiden (RNH).

DISTRIBUTION. - Java, Bali.

### *Cydnopeltus incisus* (DISTANT)

(figs. 166-170)

*Cydnopeltus incisus* DISTANT, 1901a: 101 [name only], 105 [description]; DISTANT, 1902: 104; BERGROTH, 1908: 149; LIS, 1991b: 173.

DIAGNOSIS. - Among the species with the single setigerous puncture on the costa this one is best diagnosed by the shape of the male genital capsule, as shown in the key. Besides, it differs from the other members of the genus in the presence of deep transverse postmedian impression on the pronotum, bearing a row of coarse punctures (fig. 167) (the impression is shallow and with a few punctures only in other species).

DESCRIPTION. - Head black, dorsally densely punctured with exception of clypeus, anterior part of paraclypei and a surface behind ocelli (fig. 166); clypeus slightly

shorter than paraclypei, with two hair-like setae at one third from the apex; each paraclypeus with 2-3 submarginal hair-like setae; eyes brown, ocular index 4.05-4.83 (4.39-4.83 in male, 4.05-4.24 in female); ocelli brown, interocellar index 1.7-2.1 (1.7-2.1 in male, 1.9-2.1 in female); antennae dark brown; rostrum brown, reaching middle coxae.

Pronotum black, posterior and lateral parts blackish brown; disc with a row of punctures behind head, a triangular median patch of punctures on posterior lobe, and uninterrupted row of punctures in deep transverse postmedian impression (fig. 167); each lateral margin slightly insinuate in the middle, submarginally with a row of 6-11 setigerous punctures (6-11 in male, 7-8 in female).

Scutellum black, disc with distinct evenly spaced punctures (fig. 167); apex and anterolateral angles impunctate.

Corium blackish brown, with punctures slightly smaller than those on scutellum; clavus with two rows of punctures, among them one incomplete; mesocorium with two rows of punctures paralleling clavo-corial suture, and one row paralleling exocorium; basal and apical part of mesocorium sparsely punctured, median area impunctate (fig. 167); exocorium with one row of punctures laterally, and one row paralleling mesocorium; costa with 1 setigerous puncture; membrane light brown, surpassing the tip of abdomen.

Propleuron blackish brown, depression with a few punctures, anterior convexity with numerous parallel grooves; evaporatoria on meso- and metastepleuron as in fig. 168.

Sternites brownish black, glossy in the middle, sides distinctly punctured; posterolateral angles with short hair-like bristles.

Legs not specifically modified; femora reddish brown, tibiae blackish brown, tarsi brown.

Paramere as in fig. 169; male genital capsule as in fig. 170.

Measurements (male and female respectively): body length 6.58-7.08, 6.55-7.43; body width 3.15-3.74, 3.19-3.71; head length 1.26-1.51, 1.09-1.46; head width 1.61-1.73, 1.51-1.83; pronotum length 2.12-2.36, 2.07-2.44; pronotum width 3.19-3.54, 3.10-3.71; scutellum length 1.71-1.77, 1.73-1.95; scutellum width 2.05-2.36, 1.88-2.32; antennal segments: 0.36-0.46 : 0.32-0.42 : 0.56-0.59 : 0.71-0.91 : 5th missing, 0.38-0.40 : 0.34-0.43 : 0.45-0.49 : 0.64-0.66 : 0.77.

#### TYPE MATERIAL EXAMINED

Lectotype male of *Cydnoptellus incisus* DISTANT (designated by LIS, 1991b: 173): [BURMA]: Teinzo, Birmania, FEA, Maggio 1886; Typus: *incisus* DIST.; *Cydnoptellus incisus* DIST. Typus!; Museo Civico di Genova, Lectotype (MCSN).

#### OTHER MATERIAL EXAMINED (2 males, 3 females)

INDIA: South India, Kerala St., Kottagam Dist., Peermade, 4200ft, 1 male [without genital capsule] VI.1979 (JAL).

BURMA: Carin Chebá, 900-1100m, L. FEA, 1 female V-XII-88, DISTANT Coll. 1911-383, det. as *incisus* DIST., *Cydnoptellus incisus* DIST. (type), Brit. Mus. Type No. Hem. 338, Type (BMNH).

VIETNAM: Cap St. Jacques [=Vung Tau], 1 female, 14, Brit. Mus. 1933-633, det. as *Cydnoptellus incisus* DIST. (BMNH).

THAILAND: Chiang Mai Province, Doi Inthanon N.P.: Mae Ya, 6-700m, 1 male 12.X.1981, Zool. Mus. Copenhagen leg. (ZMC).

INDONESIA: Sumatra, Tandjong-Kelong, 1 female 16 IV 1929, PRINCE LEOPOLD (IRSNB).

DISTRIBUTION. - Burma, Thailand, Vietnam, Indonesia (Sumatra).

REMARKS. - The specimen from South India is the male with missing genital capsule. The 2nd and 3rd antennal segments of this specimen have proportions different from those of the other males of *C. incisus* (0.42 and 0.48 respectively);

additionally the locality lies far from the main area of distribution of this species. Basing on these facts I suppose that the specimen from South India may belong to a new species, but further males are necessary to clarify the problem.

The specimen from Burma preserved in BMNH was erroneously labelled as the type; the genuine type (at present the lectotype) has been collected in Teinzo (not Carin Chebá) and was housed in MCSN.

### ***Cydnopeltus luzonicus*, new species**

(figs. 171-173)

**DIAGNOSIS.** - Among the species with the single setigerous punctures on the costa this one is best diagnosed by the shape of the male genital capsule and its opening as shown in the key. Besides, the species differs from all its congeners in the clypeus apically almost covered by paraclypei (nevertheless the paraclypei are not joined together in a front of the former).

**DESCRIPTION.** - Head black, anterior part dark castaneous; clypeus and posterior part of head impunctate, the remaining surface with distinct large punctures, general puncturation more sparse than that of *C. incisus*; clypeus shorter than and laterally to a degree covered by paraclypei; two hair-like setae present at one third of the clypeus length from the apex; each paraclypeus with 2 submarginal hair-like setae just anteriorly to the eye; the latter reddish brown, ocular index 4.17; ocelli blackish brown, interocellar index 2.06; antennae brown; rostrum dark brown.

Pronotum black, posterior and lateral parts brownish black; disc smooth and polished, with a few punctures behind head and in transverse postmedian impression; the latter interrupted medially, and not as deep as that of *C. incisus*; each lateral margin with a row of 6 submarginal setigerous punctures.

Scutellum dark castaneous, almost black; entire surface (except basal part) with distinct, well separated punctures.

Corium dark castaneous, almost black; clavus with two rows of punctures; mesocorium with two rows of distinct punctures paralleling clavo-corial suture, and numerous distinct punctures scattered over the remaining surface (puncturation are more dense than in both *C. incisus* and *C. horvathii*); exocorium broad (broader than in both *C. incisus* and *C. horvathii*) with one row of tiny punctures; membrane browned, surpassing the tip of abdomen.

Propleural depression with several punctures, anterior convexity with numerous parallel grooves. Evaporatoria as in *C. incisus*.

Sternites dark castaneous, sutures with rows of punctures; lateral parts with large punctures bearing hair-like bristles.

Legs dark castaneous, not specifically modified.

Paramere similar to that of *C. incisus*; opening of male genital capsule with three small teeth on the upper margin; process on the lower margin of male genital capsule sharp (fig. 172), proctiger as in fig. 171.

Measurements (male only): body length 6.05; body width 3.17; head length 1.31; head width 1.57; pronotum length 2.12; pronotum width 3.12; scutellum length 1.58; scutellum width 1.96; antennal segments: 0.34 : 0.35 : 0.53 : 0.56 : 0.90.

#### **TYPE MATERIAL EXAMINED**

Holotype male: [PHILIPPINES]: Los Banos, Luzon, coll. Dr. D. MAC GILLAVRY, det. as *Cydnopeltus* (ZMA).

**DISTRIBUTION.** - Philippines.

***Cydnopeltus sulawesicus* Lis**

(figs. 161, 174-175)

*Cydnopeltus sulawesicus* Lis, 1991e: 304.

**DIAGNOSIS.** - The species can be easily distinguished from any other within the genus by the presence of 2-3 setigerous punctures on the costal margin (the other species have only the single setigerous puncture).

**DESCRIPTION.** - Head black, dorsally coarsely punctured (fig. 161); clypeus smooth, slightly shorter than or equal in length to paraclypei, with two hair-like setae at one third of the length from the apex; each lateral margin of paraclypei with 2 setigerous punctures anteriorly to the eye; the latter reddish brown or blackish brown, ocular index 3.95-4.10; ocelli small, grayish brown or blackish brown, interocellar index 2.3-2.6; antennae dark castaneous, joints apically somewhat paler; rostrum brown or dark brown, reaching middle coxae.

Pronotum black, shining; disc with weak postmedian transverse impression bearing several punctures; a few punctures present also close to anterior margin, the remaining part of disc impunctate; each lateral margin with a row of 7-9 submarginal setigerous punctures.

Scutellum black, disc with scattered deep punctures (fig. 161).

Corium black, with distinct punctures a little smaller than those on scutellum; clavus with two rows of punctures; mesocorium punctured almost over the entire surface except for small subapical area, two rows of punctures parallel clavo-corial suture, one row parallels exocorium; the latter distally with two rows of punctures; costa with 2-3 setigerous punctures; membrane fuscous, semihyaline, shorter and narrower than abdomen.

Propleuron and evaporatoria as in *C. incisus*.

Sternites black, glossy in the middle, sides punctured; posterior margins with reddish brown hair-like bristles.

Legs blackish brown, tarsi brown.

Paramere as in fig. 174; genital capsule as in fig. 175.

Measurements (male and female respectively): body length 6.35, 6.86-7.03; body width 2.99, 3.29-3.37; head length 1.33, 1.15-1.53; head width 1.58, 1.66-1.71; pronotum length 2.07, 2.29-2.31; pronotum width 2.96, 3.27-3.32; scutellum length 1.51, 1.73-1.76; scutellum width 1.78, 2.00-2.07; antennal segments 0.36 : 0.38 : 0.53 : 0.70 : 0.98, 0.36-0.38 : 0.37-0.38 : 0.53-0.55 : 0.70-0.71 : 0.96-0.98.

**TYPE MATERIAL EXAMINED**

Holotype male of *Cydnopeltus sulawesicus* Lis: [INDONESIA]: Sulawesi Utara, Tangkoko Nat. Park, Danau Moat, 29-X-1985, Station: 067, Project Wallace, leg. R. BOSMANS & J. van STALLE, I.G. n°:26.977, Coll. R.I.Sc.N.B., *Cydnopeltus sulawesicus* Lis, det. J.A. Lis, Holotype (IRSNB).

**OTHER MATERIAL EXAMINED (2 females)**

INDONESIA: C. Sulawesi, Lore Lindu, N.P., Marena forest, alt. m 650, 2 females 14-17.xii.1985, J. KRIKKEN, multistr evergreen forest, 2 fish traps, RMNH/pw63b (RNH).

**DISTRIBUTION.** - Sulawesi.

**BIOLOGICAL DATA.** - Two females have been collected from fish traps in a tropical evergreen forest.

## Genus *Cydnus* FABRICIUS

*Cydnus* FABRICIUS, 1803: 184.

*Brachypelta* AMYOT & SERVILLE, 1843: 89, synonym by isogenotypy.

**DIAGNOSIS.** - The genus is best diagnosed by the set of following characters: the body length exceeding 5.0 mm; the evaporative area on the mesopleuron not subquadrate, covering only a part of the segment; the polished part of peritreme broad and without posteriorly curved rounded lobe; paraclypei joined in front of the clypeus; the latter with two short hair-like setae at one third of its length from the apex; the anterior convexity of propleuron either smooth or punctured, but never with parallel grooves.

**DESCRIPTION.** - Body black, sometimes browned.

Clypeus apically covered by paraclypei, and bearing two hair-like setae at one third of its length; each paraclypeus with submarginal setigerous punctures bearing long hair-like setae; eyes small, ocelli present; antennae 5-segmented.

Pronotum broader than long, convex, more or less punctured; lateral carinae distinctly developed; umbones not swollen; each lateral margin with a row of long submarginal hair-like setae.

Scutellum triangular, broader than long, with more or less visible basal and lateral rows of punctures, disc punctured, apex narrowed.

Corium divided into clavus, meso- and exocorium; costa with 1 setigerous puncture bearing long hair-like setae; membranal suture bisinuated, membrane normally developed, not reduced.

Propleural depression deep; anterior convexity either smooth (sg. *Orientocydnus*) or punctured (*Cydnus* s.str.); evaporatorium on mesopleuron not subquadrate, covering only from a half to two thirds of the segment; polished part of peritreme broad, without posteriorly curved rounded lobe.

Anterior tibiae widened; middle and posterior tibiae dorsally flattened; all tibiae armed with strong stout spines.

**TYPE OF GENUS.** - *Cimex aterrimus* FÖRSTER, 1771 (= *Cimex tristis* FABRICIUS, 1775), subsequent designation by BLANCHARD, 1844 (vide CHINA, 1943); of *Brachypelta*, *Cimex tristis* FABRICIUS, 1775, by monotypy.

### Key to subgenera of *Cydnus*

1. Head semicircular, margins broadly expanded and reflected upwards; eyes small and narrow, not protruding; 2nd antennal segment longer than or as long as the 3rd; anterior convexity of propleuron dulled by numerous punctures . . . . . ***Cydnus*** (p. 100)
- Head elongated, margins not expanded; eyes round and distinctly protruding (fig. 177); 2nd antennal segment distinctly shorter than the 3rd; anterior convexity of propleuron smooth . . . . . ***Orientocydnus*** (p. 102)

### Subgenus *Cydnus* s. str.

**DIAGNOSTIC CHARACTERS.** - Head semicircular, margins broadly expanded and reflected upwards; eyes small and narrow, not protruding; 2nd antennal segment not shorter than the 3rd; anterior convexity of propleuron dulled by numerous punctures.



TYPE OF SUBGENUS. - *Cimex aterrimus* FÖRSTER, 1771 (= *Cimex tristis* FABRICIUS, 1775).

### ***Cydnus (Cydnus) aterrimus* (FÖRSTER)**

*Cimex aterrimus* FÖRSTER, 1771: 71.

*Cimex tristis* FABRICIUS, 1775: 716, syn. by DALLAS, 1851: 121.

*Cydnus tristis*: FABRICIUS, 1803: 185.

*Brachypeltus aterrimus*: SIGNORET, 1883c: 357

*Brachypelta aterrima* [sic!]: CHANDRA, 1953: 87.

*Brachypelta aterrima*: LETHIERRY & SEVERIN, 1893: 74; DISTANT, 1902: 101; MAXWELL-LEFROY, 1909: 306; MAXWELL-LEFROY & HOWLETT, 1909: 674.

*Cydnus aterrimus*: DALLAS, 1851: 121; WALKER, 1867: 164; STÅL, 1864: 19, 1868: 6, 1876: 20; ATKINSON, 1887: 50; STICHEL, 1962: 776; PAWAR, 1973: 212; AHMAD & MOIZUDDIN, 1977: 76; AHMAD et al., 1979: 14 & 17; MOIZUDDIN & AHMAD, 1990: 309; LIS, 1991b: 173.

DIAGNOSIS. - This is the only species of the subgenus known to occur in the Oriental Region.

DESCRIPTION. - Body black, sometimes slightly browned, 11.40 to 12.90 mm in length.

Head rugosely punctured, margins broadly expanded and reflected upwards; apical part of clypeus totally covered by paraclypei; each paraclypeus with a row of 4-6 submarginal setigerous punctures bearing long hair-like setae; eyes narrow, black or blackish brown, ocular index 4.2-4.6; ocelli reddish brown, interocellar index 2.8-4.0; antennae with 2nd segment not shorter than the 3rd, usually longer; rostrum dark brown, slightly surpassing anterior coxae.

Pronotum rugosely punctured, posterior lobe additionally with fine longitudinal rugae and minute punctures; each lateral margin with 10-12 submarginal setigerous punctures bearing long hair-like setae.

Scutellum with crowded punctures smaller than those on pronotum; basal angles with oblique smooth areas.

Corium entirely densely punctured; mesocorium with crowded punctures of the same size as those in lateral parts of pronotum, some arranged in two more or less distinct rows paralleling clavo-corial suture; exocorium with crowded punctures larger than those on mesocorium; costa with 1 setigerous puncture; membrane milky white, slightly browned, with black basal margin, surpassing the tip of abdomen.

Anterior convexity of propleuron dulled by numerous punctures.

Legs not specifically modified.

#### TYPE MATERIAL EXAMINED

Lectotype male of *Cimex tristis* FABRICIUS (present designation): [INDIA?]: *tristis*; Type; *Cimex tristis* FABR. (ZMC).

#### OTHER MATERIAL EXAMINED (25 males, 35 females, 1 larva)

INDIA: Bengale, 2 females, DIARD & DUVAUCEL 1815, det. as *Brachypelta tristis* coll. AMYOT et SERVILLE (MNHN); Berhampur: 7 females 5 males, ATKINSON Collection, Bought 1895 (HEC), 4 females 3 males (BMNH, JAL); Calcutta, 1 male (BMNH); Himalaya, 1 female, SHARP Coll., 1905-313 (BMNH); West-Himalaya, Poo bei Simla, 9 males 17 females 8.I.1914, Cl. SPLICHAL ded. (ZIZM); Poo, Kashmir, 1 male 1 female, det. as *Brachypelta aterrima* FORST (ZIP); Indes Anglaises, Ajmer-Rajpudana, 1 male, ex coll. MÜLLER (IRSNB); Pondichery, 1 female 2 males, PERROTET 1857, Muséum Paris, det. as *Brachypelta tristis* coll. AMYOT et SERVILLE (MNHN); India, Rawalpindi, 1 female 26.V.1944, D. LESTON, B.M. 1944-12, det. as *Brachypelta aterrima*, D. LESTON det. (BMNH), 1 larva 13.V.1912, AVINOV & JACOBSON (ZIP); S. India, Anamalai Hills, Cinchona 3500 ft, 2 males 1 female, P. Susai NATHAN, Museum Leiden (RNH).

DISTRIBUTION. - The main area of the species distribution lies in the Palearctics. In the Oriental Region recorded from Pakistan, India and Sri Lanka. I have found one

male in the collection of ZIZM labelled "Malaya"; at present I regard it as a case of either mislabelling or accidental introduction by the agency of man.

The identity of the Oriental specimens with the Palearctic ones is beyond question; morphological characters and genital structures prove that they belong to the same species.

**BIOLOGICAL DATA.** - Data from the Palearctics are not repeated here, only those connected with Oriental records are mentioned. MAXWELL-LEFROY (1909) recorded the species in the ripening crops and suggested it to be a cold weather species. MOIZUDDIN & AHMAD (1990) collected this species at light and on wheat.

**REMARK.** - *Cydnus tristis* was described by FABRICIUS (1775) from the Oriental Region ("Habitat in Oriente"); one may suppose it was India.

### **Subgenus *Orientocydnus*, new subgenus**

**DIAGNOSTIC CHARACTERS.** - Head elongated, margins not expanded; eyes round and distinctly protruding; 2nd antennal segment distinctly shorter than the 3rd; anterior convexity of propleuron smooth, neither dulled by punctures nor with parallel grooves.

**TYPE OF SUBGENUS.** - *Cydnus (Orientocydnus) borneensis* n. sp.

### ***Cydnus (Orientocydnus) borneensis*, new species**

(figs. 176-177)

**DIAGNOSIS.** - This is the only known species of the subgenus.

**DESCRIPTION.** - Head black, anterior part of paraclypei dark castaneous; clypeus, anterior parts of paraclypei and posterior part of head (fig. 177) smooth, the remaining surface with deep and large punctures; clypeus shorter than paraclypei, and with two hair-like setae at one third of its length from the apex; paraclypei jointed in front of the clypeus, each paraclypeus with 2 submarginal setigerous punctures; eyes brown, ocular index 4.22; ocelli yellowish brown, interocellar index 1.9; antennae brown, 2nd segment about 1.5 times shorter than the 3rd; rostrum brown, reaching anterior margin of posterior coxae.

Pronotum black, posterior margin brownish black; calli impunctate, the remaining surface with large well separated punctures; one distinct row present right behind the anterior margin, the second right behind the middle (fig. 176); lateral margins medially insinuated, submarginally with 4 setigerous punctures on anterior lobe.

Scutellum blackish brown, disc distinctly elevated (especially the anterolateral angles), and densely punctured with punctures a little larger than those on pronotum (fig. 176); anterolateral angles and the tip of scutellum impunctate.

Corium dark castaneous, distinctly punctured; clavus with two rows of punctures; mesocorium with two rows of punctures paralleling clavo-corial suture, mesocorial disc with numerous punctures in the basal half and several at the apical margin; exocorium with one almost complete row of punctures, and a few punctures apically (fig. 176); costa with 1 setigerous puncture; membrane brown, semihyaline, slightly surpassing the tip of abdomen.

Propleuron smooth and polished; anterior convexity neither dulled by punctures nor with parallel grooves; depression with a few punctures close to coxae.

Sternites blackish brown, shining and smooth, laterally and along sutures with several punctures.

Legs dark castaneous, not specifically modified.

Measurements (female only): body length 6.65; body width 3.27; head length 1.40; head width 1.61; pronotum length 2.15; pronotum width 3.29; scutellum length 1.78; scutellum width 2.07; antennal segments: 0.34 : 0.34 : 0.52 : 0.67 : 0.87.

TYPE MATERIAL EXAMINED

Holotype female: [MALAYSIA]: B.N. Borneo, Mt. Kinabalu, Kenokok, 3,300ft, 22 Apr. 1929; H.M. PENDELBURY coll., F.M.S. Museum; Ex F.M.S. Museum, B.M. 1955-354 (BMNH).

DISTRIBUTION. - Borneo.

### Genus *Nishadana* DISTANT

*Drupadia* DISTANT, 1899a: 223, name preoccupied by *Drupadia* MOORE, 1884 [in *Lepidoptera*].

*Nishadana* DISTANT, 1899b: 442, new name for *Drupadia* DISTANT, 1899.

DIAGNOSIS. - The genus is best diagnosed by the set of following characters: the evaporative area on the mesopleuron small, not subquadrate, covering only a small part of the segment; the polished part of peritreme with rounded lobe not curved posteriorly (fig. 181); the clypeus with neither hair-like setae nor pegs; the paraclypei longer than the clypeus and joined in a front of it (fig. 178); each paraclypeus submarginally with hair-like setae; the membranal suture with distinct V-shaped insinuation (figs. 179, 180, 183).

DESCRIPTION. - Head with lateral margins distinctly turned up; paraclypei longer than clypeus and joined in front of it; each paraclypeus submarginally with hair-like setae, and triangularly projecting apex (fig. 178); eyes distinctly protruding, ocelli small; antennae short, 5-segmented.

Pronotum distinctly broader than long, anteriorly narrowed; umbones swollen, covering posterolateral margins of pronotum; each lateral margin with two rows (upper and lower) of submarginal setigerous punctures.

Scutellum short, wider than long; apex with additional, tonque-like, wide process (fig. 179).

Corium short, exocorium broader than mesocorium; costa slightly turned down, setigerous punctures present; membrane large, continued proximally in a V-shaped notch to meet the apex of the medial fracture.

Propleuron smooth and polished, depression with several punctures; evaporative areas on meso- and metapleuron occupying only a small part of the segment; elongated polished band of peritreme with lobe not curved posteriorly (fig. 181).

Anterior tibiae expanded distally, outer margin with strong spines; posterior tibiae almost cylindrical.

Paramere with characteristic elongated hypophysis (figs. 182, 184).

TYPE OF GENUS. - *Drupadia typica* DISTANT, 1899, by monotypy.

REMARKS. - The genus was described by DISTANT (1899a) as related to *Chilocoris*

MAYR, and in that way showing the *Cydninae* affinities. Nevertheless, in subsequent papers it was placed within either *Cydninae* (FUENTE, 1972; LINNAVUORI, 1989, 1993) or *Sehirinae* (HORVÁTH, 1919; STICHEL, 1962; AHMAD et al., 1979; MOIZUDDIN & AHMAD, 1990). The present studies show it unquestionable belongs to the tribe *Cydnini* of the subfamily *Cydninae*. Beside Oriental species, the genus includes also one Palaearctic (eremian) representative - *N. arabica* HORV.

#### Key to species of *Nishadana*

1. Body bicoloured; corium yellow with brown punctures; distal part of exocorium with brown patch; head, pronotum and scutellum dark chocolate brown or dark castaneous; scutellum scarcely punctured (fig. 180); paramere as in fig. 182 . . . . . ***typica*** (p. 104)
- Body uniformly dark coloured; corium dark brown; scutellum densely punctured (fig. 183); paramere as in fig. 184 . . . . . ***umbrosa*** (p. 105)

#### ***Nishadana typica* (DISTANT)**

(figs. 178-182)

*Drupadia typica* DISTANT, 1899a: 223.

*Nishadana typica*: DISTANT, 1899b: 442, 1901a: 101, 1902: 107; BERGROTH, 1908: 150; AHMAD et al., 1979: 15 & 20; MOIZUDDIN & AHMAD, 1990: 337.

**DIAGNOSIS.** - The species can be distinguished from *N. umbrosa* by the head, the pronotum and the scutellum dark chocolate brown or dark castaneous, and the corium yellow or pale yellow. Besides, as shown in the key, the two species differ in the puncturation of scutellum, and the shape of paramere.

**DESCRIPTION.** - Head dark castaneous or almost blackish brown, dorsally distinctly punctured except for clypeus and vertex; each paraclypeus with 3 submarginal setigerous punctures bearing hair-like setae (fig. 178); eyes dark castaneous or dark brown, ocular index 3.60-4.33; ocelli blackish brown, interocellar index 8.0-10.0; antennae yellowish brown; rostrum brown reaching anterior margin of middle coxae.

Pronotum dark castaneous or dark chocolate brown, disc distinctly punctured with exception of calli and the tip of umbones; each lateral margin with two rows (upper and lower) of setigerous punctures (altogether 10-13 punctures) bearing hair-like setae.

Scutellum of the same colour as pronotum, disc scarcely punctured (fig. 180), puncturation conspicuously weaker than that in the next species..

Corium yellow or pale yellow, punctures brown, exocorium distally with brown patch; clavus with two, more or less distinct rows of punctures; costa black, with 5-9 setigerous punctures; membrane semihyaline, milky grey, slightly surpassing the tip of abdomen.

Propleuron smooth, polished; depression with several punctures; evaporatoria as in fig. 181.

Sternites brown, with distinct large puncture and numerous long hair-like setae along the posterior margins.

Legs pale brown or brown, not specifically modified.

Paramere as in fig. 182.

Measurements (male and female respectively): body length 2.50-2.93, 2.80-3.10; body width 1.57-1.87, 1.85-2.12; head length 0.50-0.61, 0.67-0.73; head width 0.74-0.82, 0.83-0.88; pronotum length 0.84-1.05, 1.12-1.17; pronotum width

1.49-1.85, 1.85-1.95; scutellum length 0.79-0.98, 0.98-1.09; scutellum width 0.91-1.13, 1.17-1.23; antennal segments: 0.10-0.11 : 0.07-0.11 : 0.15-0.18 : 0.17-0.18 : 0.19-0.20, 0.11-0.12 : 0.09-0.11 : 0.15-0.21 : 0.18-0.21 : 0.21-0.25.

#### TYPE MATERIAL EXAMINED

Lectotype male of *Drupadia typica* DISTANT (present designation): [INDIA]: Lohar-Daga; ATKINSON Coll. 192-3; Type; *Drupadia typica* DIST., Brit. Mus., Type No. Hem. 352 (BMNH).

Paralectotypes: 5 females: [INDIA]: Paratype; Bengal, Lohardaga, ATKINSON Coll. 1892-3; *Nishadana typica* DIST. (BMNH).

#### OTHER MATERIAL EXAMINED (3 males, 14 females)

INDIA: Lonauli, Ind. or., BIRÓ, 1 female, det. as *typica* DIST. by HORVÁTH (HNHM); North India, 4 females 1 male, det. as *typica* DIST. by DISTANT, *Nishadana typica* DIST. (HNHM); Ranchi, Irvine, DISTANT Coll. 1911-383, 5 females 1 male, Paratype, det. as *Nishadana typica* DIST. (BMNH); South India, 1 female, T.V. CAMPBELL Coll., B.M. 1930-599, det. as *N. typica* (BMNH); India, 1 female 21.VI.1910, near rice root, PUSA A.H., PUSA coll., From Ind. Mus., DISTANT coll., B.M. 1911-383 (BMNH).

BURMA: Rangoon, Birmania: 1 male VI 1885, FEA, det. as *Nishadana typica* DIST., Museo Civico di Genova (MCSN); 2 females FEA V.1885, DISTANT Coll. 1911-383, Paratype, *Nishadana typica* DIST. (BMNH).

DISTRIBUTION. - India, Burma.

AHMAD et al. (1979) listed also Bangladesh (with no detailed data), but this record was not mentioned in the subsequent paper (MOIZUDDIN & AHMAD, 1990).

BIOLOGICAL DATA. - One examined specimen has been collected near a rice root in India.

REMARK. - The specimens from Ranchi (India) and Rangoon (Burma) preserved in BMNH, and labelled "Paratype" certainly did not belong to the original syntype series.

### *Nishadana umbrosa* HORVÁTH (figs. 183-184)

*Nishadana umbrosa* HORVÁTH, 1919: 266.

DIAGNOSIS. - The uniformly dark coloured body, the densely punctured scutellum, and the shape of the paramere as in fig. 184 distinguish this species from *N. typica*.

DESCRIPTION. - Head brownish black, dorsally distinctly punctured except for clypeus and posterior part; each paraclypeus with 3 submarginal setigerous punctures bearing hair-like setae; eyes castaneous, ocular index 3.94; ocelli blackish brown, interocellar index 6.25; antennae yellowish brown; rostrum brown surpassing anterior coxae.

Pronotum brownish black, disc distinctly punctured with exception of calli and tip of umbones, punctures slightly larger than those on head; each lateral margin with two rows (upper and lower) of setigerous punctures (altogether 14-15 punctures) bearing hair-like setae.

Scutellum of the same colour as pronotum, disc with crowded puncturation; anterolateral angles smooth (fig. 183).

Corium dark brown, densely punctured (fig. 183); clavus with two distinct rows of punctures; costa with 8 setigerous punctures; membrane semihyaline, somewhat milky grey, slightly surpassing the tip of abdomen.

Propleuron dark castaneous, smooth and polished, depression with several

punctures; evaporatoria as in *N. typica*.

Sternites castaneous, with distinct large puncture and numerous long hair-like setae along the posterior and lateral margins.

Legs brown, not specifically modified.

Paramere as in fig. 184.

Measurements (male only): body length 2.59; body width 1.61; head length 0.60; head width 0.75; pronotum length 0.90; pronotum width 1.56; scutellum length 0.84; scutellum width 1.01; antennal segments 0.11 : 0.09 : 0.17 : 0.18 : 0.20.

TYPE MATERIAL EXAMINED

Lectotype male of *Nishadana umbrosa* HORVÁTH (present designation): [VIETNAM]: Saigon; *umbrosa* H. det. HORVÁTH (HNHM).

DISTRIBUTION. - Vietnam.

REMARK. - The specimen (male) preserved in HNHM is the only individual of *N. umbrosa* in the HORVÁTH's collection; it bears the original HORVÁTH's type label (white with red mid-line), and matches exactly the original description. Therefore, in spite of a discrepancy between the sex of this specimen and the specimen(s) indicated by HORVÁTH (1919) in the original description (male and female(s) respectively), there exist no doubts that the specimen belonged to the original syntype series.

### Genus *Parachilocoris* HORVÁTH

*Parachilocoris* HORVÁTH, 1919: 254.

DIAGNOSIS. - The genus is closely related to *Chilocoris* in a general outline of the body and a shape of the evaporatoria and the peritreme, but can be easily distinguished from the latter by the absence of pegs on the paraclypei (both pegs and hair-like setae are present in *Chilocoris*).

DESCRIPTION. - Head broader than long, dorsally almost impunctate; clypeus free, sometimes laterally slightly covered by paraclypei, subapically with two, sometimes almost indistinct, short hair-like setae (figs. 185, 196); each paraclypeus with submarginal setigerous punctures bearing hair-like setae; eyes protruding, ocelli present; antennae 5-segmented, 2nd segment minute.

Pronotum broader than long, disc with distinct postmedian transverse impressed line (fig. 186); calli divided by longer or shorter impressed line, apically reaching the line paralleling anterior margin; umbones swollen, covering posterolateral margins; each lateral margin with submarginal setigerous punctures.

Scutellum short, triangular; basal and lateral rows of punctures distinctly developed.

Corium divided into clavus, meso- and exocorium; costa without setigerous punctures; membrane large, extending far beyond the posterior extremity of abdomen; membranal suture sinuated.

Propleuron polished, depression sometimes with a few punctures; evaporatoria similar to those of the genus *Chilocoris* (fig. 187), but the apical part of peritreme more curved posteriorly and there more sharp.

Sternites glossy in the middle, laterally with punctures bearing distinct hairs.

Anterior tibiae expanded similar as in the genus *Chilocoris*.

Paramere with elongated hypophysis (figs. 190-195, 197), penis not sclerified.



TYPE OF GENUS. - *Parachilocoris dispar* HORVÁTH, 1919, by original designation.

REMARKS. - At present seven Oriental species are known to belong to this genus, among them four new to the science. They are morphologically very similar to each other, but can be separated easily on a basis of the male genital structures. Females are more difficult to separate, but I think that at present state of our knowledge the given key characters are good enough for their recognition.

#### Key to species of *Parachilocoris*

1. Corium either entirely or at least mesocorium yellowish brown or pale brown, usually almost translucent, distinctly paler than pronotum and scutellum; paramere as in fig. 197 ..... *semialbidus* (p. 114)
- Corium brown, dark brown, castaneous or blackish brown, always of the same colour as pronotum and scutellum; paramere not as above ..... 2.
2. Eyes large, ocular index not exceeding 1.9 (1.4-1.8) ..... 3.
- Eyes small, ocular index exceeding 1.9 (2.0-2.6) ..... 5.
3. Paramere as in fig. 190; female body length exceeding 3.4 mm (3.58-4.12) ..... *dispar* (p. 108)
- Paramere not as above; female body length not exceeding 3.4 mm (2.51-3.30) ..... 4.
4. Paramere as in fig. 191; dorsal body surface pale brown, brown or ochraceous; female body length 2.51-2.80 ..... *borneensis* (p. 107)
- Paramere as in fig. 195; dorsal body surface castaneous or dark castaneous; body length 2.73-3.30 ..... *navus* (p. 112)
5. Body length exceeding 3.4 mm (3.46-4.34); paramere as in fig. 192 ..... *luzonicus* (p. 109)
- Body length not exceeding 3.4 mm (2.90-3.37); paramere not as above ..... 6.
6. Ocular index exceeding 2.3 (2.4-2.6); body castaneous or dark castaneous; paramere as in fig. 193 ..... *mariani* (p. 110)
- Ocular index not exceeding 2.3 (2.0-2.3); body brown; paramere as in fig. 194 ..... *minutus* (p. 111)

#### *Parachilocoris borneensis*, new species

(fig. 191)

DIAGNOSIS. - The uniformly coloured dorsum (pale brown, brown or ochraceous), the ocular index ranging from 1.5 to 1.8, the body length not exceeding 3.0 mm (2.51-2.81), and the paramere as in fig. 191 mark this species as distinct from all others in the genus.

DESCRIPTION. - Body pale brown, brown or ochraceous.

Head dorsally slightly wrinkled, with several punctures forming the U-shaped line behind clypeus; the latter as long as or slightly shorter than paraclypei, two subapical setigerous punctures sometimes almost inconspicuous; each paraclypeus with 4 submarginal hair-like setae (two long, two short); eyes blackish brown or reddish brown, ocular index 1.50-1.80; ocelli reddish brown, interocellar index about 6.0-9.0; antennae paler than head; rostrum yellowish brown, reaching middle coxae.

Pronotum divided into lobes by transverse uninterrupted impressed line bearing several punctures in its lateral parts; anterior lobe smooth and polished, laterally with a few dark punctures; posterior lobe with more than 20 dark punctures; each lateral margin with 2 submarginal setigerous punctures - one at the middle, the second at the posterolateral angle.

Scutellum with numerous scattered dark punctures of the same size as those on pronotum.

Corium with dark punctures smaller than those on scutellum and pronotum; clavus with two rows of punctures (one short, one long); mesocorium with two rows of punctures paralleling clavo-corial suture, among them one accompanied by incised line, the remaining area with scattered punctures in apical half; exocorium impunctate except for a row of punctures paralleling mesocorium; membrane hyaline, slightly browned, distinctly surpassing the tip of abdomen.

Propleuron polished and smooth, with a few punctures in depression; evaporatoria typical of the genus.

Sternites glossy, lateral parts with small punctures bearing hairs.

Legs brown, not specifically modified.

Paramere as in fig. 191.

Measurements (male and female respectively): body length 2.78-2.81, 2.51-2.80; body width 1.46-1.51, 1.39-1.54; head length 0.53-0.57, 0.44-0.50; head width 0.73-0.75, 0.64-0.77; pronotum length 0.78-0.87, 0.68-0.78; pronotum width 1.36-1.44, 1.24-1.42; scutellum length 0.71-0.77, 0.63-0.76; scutellum width 0.84-0.91, 0.78-0.90; antennal segments: 0.12-0.14 : 0.05-0.07 : 0.24-0.28 : 0.21-0.28 : 0.32-0.35, 0.11-0.14 : 0.05-0.07 : 0.26-0.28 : 0.28-0.33 : 0.29-0.32.

#### TYPE MATERIAL EXAMINED

Holotype male: [MALAYSIA]: RMNH/sa38a, Sabah: Keningau Area, Nabawan (site C), alt. m 0450, 14-17/xi/1987, KRIKKEN & ROMBAUT, podzol forest, 2 human excreta traps (RNH).

Paratypes: 1 male: [PHILIPPINES]: Philipp., Polillo (JAL); 1 female: [MALAYSIA]: RMNH/sa32e, Sabah: Mt Kinabalu NP, Poring (*Rafflesia* forest), alt. m 0500-0600, 08-11/xi/1987, KRIKKEN & ROMBAUT, multistrata evergreen forest, large cow dung pad (RNH); 1 female: [INDONESIA]: (E. Kalimantan), 35 km NE of Balikpapan, 6 Jan. 1981, J. AOKI & H. HARADA (NSMT).

DISTRIBUTION. - Borneo (Kalimantan, Sabah), Philippines.

BIOLOGICAL DATA. - The two of type specimens have been collected in evergreen forests - one from the "human excreta traps", and the second from a large cow dung pad.

### ***Parachilocoris dispar* HORVÁTH**

(figs. 185-190)

*Parachilocoris dispar* HORVÁTH, 1919: 254.

*Parachilocoris minutus*, not of DISTANT: LIS, 1991e: 306.

DIAGNOSIS. - The species is best characterized within the genus by the uniformly coloured dorsum, the body length from 3.35 to 4.27 mm, the large eyes (ocular index from 1.45 to 1.80), and the paramere as in fig. 190.

DESCRIPTION. - Body castaneous or dark castaneous.

Head slightly wrinkled, and with several punctures between eyes; clypeus as long as or slightly shorter than paraclypei, subapically with two setigerous punctures (fig. 185); each paraclypeus with 4 submarginal hair-like setae (two

long, and two short); eyes blackish brown, ocular index 1.45-1.80; ocelli reddish brown, interocellar index about 4.0-8.0; antennae pale brown or brown; rostrum yellowish brown or pale brown, reaching at least middle of mesosternum.

Pronotal transverse postmedian impressed line with numerous punctures, especially in its lateral parts (fig. 186); anterior lobe smooth and polished, laterally with a few dark punctures; posterior lobe with irregularly scattered dark punctures; each lateral margin with two submarginal setigerous punctures - one at the middle, the second at the posterolateral angle.

Scutellum (fig. 189) with numerous scattered dark punctures of the same size as those on pronotum, apex somewhat elongated.

Corium with punctures smaller than those on scutellum and pronotum; clavus with two rows of punctures (one long, one short); mesocorium with two rows of punctures paralleling clavo-corial suture, among them one accompanied by incised line, mesocorial disc with numerous punctures (fig. 188); exocorium almost impunctate except for a row of punctures paralleling mesocorium, and the second row laterally; membrane browned, semihyaline, distinctly surpassing the tip of abdomen.

Propleuron polished and smooth, depression with a few punctures; evaporatoria on meso- and metapleuron as in fig. 187.

Sternites glossy in the middle, lateral parts with punctures bearing long brown hairs.

Legs not specifically modified.

Paramere as in fig. 190.

Measurements (male and female respectively): body length 3.34-4.27, 3.58-4.12; body width 1.65-2.25, 1.68-2.02; head length 0.59-0.73, 0.54-0.61; head width 0.82-1.08, 0.78-0.91; pronotum length 0.99-1.36, 0.91-1.15; pronotum width 1.55-2.21, 1.58-1.93; scutellum length 0.77-1.17, 0.87-0.98; scutellum width 0.96-1.38, 0.97-1.15; antennal segments: 0.11-0.20 : 0.07-0.12 : 0.29-0.36 : 0.26-0.32 : 0.32-0.39, 0.11-0.14 : 0.05-0.08 : 0.26-0.29 : 0.25-0.31 : 0.33-0.38.

#### TYPE MATERIAL EXAMINED

Lectotype male of *Parachilocoris dispar* HORVÁTH (present designation): [INDONESIA]: Lombok, Sapit 2000', April 1896, H. FRUHSTORFER; *dispar* HORV. det HORVÁTH; Lectotype, *Parachilocoris dispar* HORV., labelled by R.C. FROESCHNER 59; *Parachilocoris dispar* (HNHM).

Paralectotype male: [INDONESIA]: Lombok, Sapit 2000', April 1896, H. FRUHSTORFER; *dispar* HORV. det. HORVÁTH (HNHM).

#### OTHER MATERIAL EXAMINED (3 males, 7 females)

INDONESIA: Java or., Mt Tangger, 1 female 1898, FRUHSTORFER (JAL); Java occid., Buitenzorg - Preanger, 1 female, J.D. PASTEUR (RNH); G. Tangkoeban Prahoe, 4000-5000 Voet, Preanger, Java, 3 males 4 females XI.1935, F.C. DRESCHER (RNH, JAL); Sulawesi Utara, Dumoga-Bone Nat. Park, Base Camp (200m), 1 female 13-X-1985, Station: 024, Project WALLACE, det. as *Parachilocoris minutus* (Dist.) by J.A. Lis (IRSNB).

DISTRIBUTION. - Java, Lombok, Sulawesi.

### ***Parachilocoris luzonicus*, new species**

(fig. 192)

DIAGNOSIS. - The species is best diagnosed by the set of following characters: the dorsum uniformly coloured; the body length exceeding 3.4 mm (3.46-4.39); the eyes small, the ocular index ranging from 2.00 to 2.31; the paramere as in fig. 192.

DESCRIPTION. - Body castaneous or dark castaneous, polished, dorsal surface

uniformly coloured.

Head dorsally slightly wrinkled, and with several punctures between eyes; clypeus as long as or slightly shorter than paraclypei, subapically with two hair-like setae; each paraclypeus with 4 submarginal hair-like setae (two long, two short); eyes reddish brown or blackish brown, ocular index 2.00-2.31 (2.00-2.23 in male, 2.00-2.31 in female); ocelli reddish brown, interocellar index about 5.0-7.0; antennae brown, the last segment yellowish or pale brown; rostrum brown, reaching middle of mesosternum.

Pronotal transverse uninterrupted impressed line with a few dark punctures laterally; anterior lobe smooth, laterally with a few dark punctures; posterior lobe with about 30 punctures not reaching the posterior margin; each lateral margin with 2 submarginal setigerous punctures - one at the middle, the second at the posterolateral angle.

Scutellum with a little more than a dozen dark scattered punctures, slightly smaller than those on pronotum.

Corium with punctures a little smaller than those on scutellum; clavus with two rows of punctures (one long, one short); mesocorium with two rows of punctures paralleling clavo-corial suture, mesocorial disc apically with numerous punctures; exocorium almost impunctate except for a row paralleling mesocorium and a few punctures apically; membrane hyaline, slightly browned, distinctly surpassing the extremity of abdomen.

Propleuron with a few punctures in depression; evaporatoria and apex of peritreme as in *P. dispar*.

Sternites almost blackish brown; each segment laterally and posteriorly with punctures bearing brown hairs.

Legs brown, not specifically modified. Paramere as in fig. 192.

Measurements (male and female respectively): body length 3.63-4.34, 3.46-4.02; body width 1.90-2.44, 1.80-2.17; head length 0.50-0.66, 0.59-0.66; head width 0.87-0.98, 0.80-0.95; pronotum length 1.02-1.29, 0.85-1.07; pronotum width 1.80-2.17, 1.78-2.09; scutellum length 1.00-1.19, 0.90-1.10; scutellum width 1.15-1.37, 1.05-1.29; antennal segments: 0.14-0.15 : 0.06-0.08 : 0.31-0.34 : 0.28-0.30 : 0.38-0.42, 0.12-0.17 : 0.07-0.08 : 0.28-0.35 : 0.25-0.32 : 0.35-0.42.

#### TYPE MATERIAL EXAMINED

Holotype male: [PHILIPPINES]: (Philippines), Latipan Caves, 1400m, Sagada Mountain Prov., N. Luzon Is., 22.VII.1985, Y. NISHIKAWA (NSMT).

Paratypes: 2 males and 2 females: [PHILIPPINES]: (Philippines), Latipan Caves, 1400m, Sagada Mountain Prov., N. Luzon Is., 22.VII.1985, Y. NISHIKAWA (NSMT, JAL); 3 females: [PHILIPPINES]: Luzon: Philippines, Latipan Caves, 1400m, Sagada nr Bontoc, 22.VII.1985, M. SAKAI leg. (NSMT, JAL).

DISTRIBUTION. - Philippines.

### ***Parachilocoris mariani*, new species**

(fig. 193)

DIAGNOSIS. - The species can be separated from all others within the genus by the set of following characters: the dorsum uniformly coloured (castaneous or dark castaneous); the body length from 3.17 to 3.34 mm; the eyes small, ocular index 2.4-2.6; the paramere as in fig. 193. This new species is related to *P. minutus*, but can be at once recognized by the body colour, the ocular index, the shape of paramere, and the mesocorium bearing punctures smaller than those on the scutellum and the pronotum (all punctures are almost of the same size in *P. minutus*).

DESCRIPTION. - Body castaneous or dark castaneous.

Head dorsally slightly wrinkled, and with a few punctures between eyes; clypeus as long as paraclypei, subapically with two hair-like setae; each paraclypeus with a row of 4 submarginal hair-like setae (two long, two short); eyes blackish brown, ocular index 2.40-2.60; ocelli reddish brown, interocellar index about 4.0-7.0; antennae brown; rostrum brown, surpassing anterior coxae.

Pronotal transverse uninterrupted impressed line dark, laterally with several punctures; anterior lobe smooth, laterally with a few dark punctures; posterior lobe with more than a dozen dark, distinctly separated punctures; each lateral margin with 2 submarginal setigerous punctures - one at the middle, the second at the posterolateral angle.

Scutellum sparsely punctured, punctures of the same size as those on pronotum.

Corium with punctures smaller than those on pronotum and scutellum; clavus with two rows of punctures (one long, one short); mesocorium with two rows of punctures paralleling clavo-corial suture, mesocorial disc numerous small punctures; exocorium almost impunctate except for a row paralleling mesocorium; membrane colourless, distinctly surpassing the extremity of abdomen.

Propleuron with a few punctures in depression.

Sternites almost blackish brown, alutaceous; each segment laterally and along the posterior margin with punctures bearing brown hairs.

Legs not specifically modified. Paramere as in fig. 193.

Measurements (male and female respectively): body length 3.17-3.24, 3.34-; body width 1.73-1.78, 1.78; head length 0.45-0.56, 0.56; head width 0.78-0.80, 0.78; pronotum length 1.05-1.07, 1.01; pronotum width 1.68-1.69, 1.68; scutellum length 0.85-0.90, 0.95; scutellum width 1.02-1.10, 1.00; antennal segments: 0.14-0.15 : 0.06-0.07 : 0.27-0.29 : 0.24-0.28 : 0.35-0.40, 0.12 : 0.07 : 0.26 : 0.27 : 0.35.

#### TYPE MATERIAL EXAMINED

Holotype male: [NEPAL]: Nepal: Bakhri Kharka, 5,500 ft., 24.iv.1954, J. Quinlan, B.M. Nepal Expt., B.M. 1954-540, *Parachilocoris minutus* (DIST.), FROESCHNER 72, *Cydnopeltus minutus* (BMNH).

Paratypes: [NEPAL]: 352 Taplejung Distr., above Yamputhin, left bank of Kabeli Khola, bushes, open forest, 1800-2000 m, 27-29 Apr. 1988, J. MARTENS & W. SCHAWALLER leg. (JMC, JAL).

ETYMOLOGY. - The species is dedicated to my Father, Marian.

DISTRIBUTION. - Nepal.

BIOLOGICAL DATA. - The paratypes have been collected in bushes at the altitude of 1800-2000 m a.s.l.

### ***Parachilocoris minutus* (DISTANT)**

(fig. 194)

*Cydnopeltus minutus* DISTANT, 1901a: 105 [lectotype and paralectotype female], 1902: 103 [part]; BERGROTH, 1908: 149.

*Parachilocoris minutus*: LIS, 1991b: 173.

Misidentifications: DISTANT, 1901a: 105 [paralectotype male]; HORVÁTH, 1919: 255; LIS, 1991e: 306.

DIAGNOSIS. - The species is best diagnosed by the set of following characters: the dorsum uniformly brown; the body length from 2.90 to 3.37 mm; the ocular index 2.0-2.3; the paramere as in fig. 194.

**DESCRIPTION.** - Body brown. Head smooth, sometimes slightly wrinkled, and with several punctures between eyes; clypeus as long as paraclypei, subapically with two hardly visible hair-like setae; each paraclypeus with 3-4 submarginal hair-like setae (2 long, 1-2 short); eyes brown, ocular index 2.00-2.30; ocelli reddish brown, interocellar index about 6.0-7.0; antennae brown, last segment sometimes yellowish or pale brown; rostrum brown or pale brown, surpassing anterior coxae.

Pronotum polished, transverse postmedian uninterrupted impressed line dark, laterally with several punctures; anterior lobe smooth, laterally with a few dark punctures; posterior lobe with about a dozen large dark distinctly separated punctures; each lateral margin with 2 submarginal setigerous punctures - one at the middle, the second at the posterolateral angle.

Scutellum with a little more than a dozen dark punctures of the same size as those on pronotum.

Corium sometimes slightly paler than pronotum and scutellum, but never yellowish brown; punctures almost of the same size as those on pronotum; clavus with two rows of punctures (one long, one short); mesocorium with two rows of punctures paralleling clavo-corial suture, mesocorial disc apically with numerous small punctures; exocorium almost impunctate, except for a row paralleling mesocorium; membrane almost colourless, slightly browned, distinctly surpassing the tip of abdomen.

Propleuron pale brown, depression with a few punctures. Sternites smooth, laterally with punctures bearing brown hairs.

Legs not specifically modified. Paramere as in fig. 194.

Measurements (male and female respectively): body length 2.90, 2.95-3.37; body width 1.66, 1.58-1.76; head length 0.57, 0.52-0.58; head width 0.77, 0.73-0.85; pronotum length 0.85, 0.85-0.95; pronotum width 1.58, 1.46-1.68; scutellum length 0.76, 0.78-0.88; scutellum width 0.95, 0.93-1.15; antennal segments: 0.14 : 0.06 : 0.29 : 0.30 : 0.32, 0.13-0.20 : 0.06-0.12 : 0.32-0.34 : 0.32-0.38 : 0.34-0.39.

#### TYPE MATERIAL EXAMINED

Lectotype female of *Cydnopeltus minutus* DISTANT (designated by LIS, 1991b: 173): [BURMA]: Carin, Asciuii Ghécú, 1400-1500m, L. FEA, III-IV 88; Typus; *minutus* DIST.; *Cydnopeltus minutus* DIST. Typus!; Museo Civico di Genova; Lectotype det. J.A. LIS 1990 (MCSN).

Paralectotype female: [BURMA]: Paratype; Carin, Asciuii Ghécú, 1400-1500m, L. FEA, III-IV.88; DISTANT coll. 1911-383; *Cydnopeltus minutus* DIST.! (BMNH).

#### OTHER MATERIAL EXAMINED (2 males, 2 females)

INDIA: Calcutta, N.A., 1 male 11-VII-08, museum compound from Ind. Mus., DISTANT Coll., B.M. 1911-383, gen. near *Chilocoris* (BMNH); Haldwani Dist., Kumaon, India, 1 female, H.G. CHAMPION, CHAMPION Coll., B.M. 1927-409 (BMNH); Khaula, 4500ft, Almora, India, 1 female, H.G.C (JAL); Gopaldara, Bw., Darjeeling, 4720ft, 1 male 4-IX-14, H. STEVENS, on ground (JAL).

**DISTRIBUTION.** - Burma, India.

The record from Sulawesi (LIS, 1991e) pertained to *P. dispar*.

**BIOLOGICAL DATA.** - One specimen was collected on ground.

### ***Parachilocoris navus*, new species**

(fig. 195)

**DIAGNOSIS.** - The species can be separated from others within the genus by the set of following characters: the dorsum uniformly castaneous or dark castaneous; the body length from 2.73 to 3.30 mm; the eyes large, ocular index from 1.40 to



1.80; the paramere as in fig. 195. This new species is similar to *P. borneensis*, but can be recognized by the body colour, the ocular index, and the shape of paramere.

**DESCRIPTION.** - Body castaneous or dark castaneous.

Head with several punctures between eyes; clypeus as long as or slightly either shorter or longer than paraclypei, two subapical setigerous punctures almost indistinct; each paraclypeus with a row of 4 submarginal hair-like setae (two long, two short); eyes reddish brown or dark reddish brown, ocular index 1.40-1.80; ocelli reddish brown, interocellar index about 6.0-8.0; antennae brown; rostrum brown, reaching middle of mesosternum.

Pronotum with blackish brown transverse uninterrupted impressed line bearing numerous punctures; anterior lobe smooth, laterally with a few blackish brown punctures; posterior lobe with more than 20 scattered blackish brown punctures; each lateral margin with 2 submarginal setigerous punctures - one at the middle, the second at the posterolateral angle.

Scutellum with a little more than 20 scattered blackish brown punctures of the same size as those on pronotum.

Corium with punctures a little smaller than those on scutellum and pronotum; clavus with two rows of punctures (one long, one short); mesocorium with two rows of punctures paralleling clavo-corial suture, the remaining area punctured with smaller punctures; exocorium almost impunctate, except for a row paralleling mesocorium; membrane semihyaline, browned, distinctly surpassing the tip of abdomen.

Propleuron with 1-2 almost indistinct punctures in depression.

Sternites almost blackish brown, lateral parts with punctures bearing distinct hairs.

Legs brown, not specifically modified. Paramere as in fig. 195.

Measurements (male and female respectively): body length 2.73-3.05, 2.85-3.30; body width 1.55-1.70, 1.54-1.81; head length 0.52-0.59, 0.55-0.63; head width 0.75-0.84, 0.77-0.89; pronotum length 0.88-0.96, 0.88-1.02; pronotum width 1.44-1.58, 1.45-1.66; scutellum length 0.70-0.83, 0.78-0.98; scutellum width 0.91-0.98, 0.94-1.05; antennal segments: 0.11-0.14 : 0.07-0.08 : 0.25-0.28 : 0.22-0.24 : 0.30-0.34, 0.12-0.14 : 0.07-0.08 : 0.24-0.31 : 0.22-0.27 : 0.28-0.35.

#### TYPE MATERIAL EXAMINED

Holotype male: [MALAYSIA]: RMNH/sa04a, Sabah: Danum Valley, Bole River, km 56 W Lahad Datu, alt. m 0100-0200, 19-23/x/1987, KRIKKEN & ROMBAUT, second-growth forest, 4 human excr traps (RNH).

Paratypes: 1 female: [MALAYSIA]: RMNH/sa38b, Sabah: Keninagu Area, Nabawan (site C), alt. m. 0450, 14-17/xi/1987, KRIKKEN & ROMBAUT, podzol forest, 2 fish traps (RNH); 1 female: [MALAYSIA]: RMNH/sa46, Sabah: Crocker Range, Keningau-Kimanis rd (km 19), alt. m 0900, 19-23/xi/1987, KRIKKEN & ROMBAUT, multistr evergr forest, 8 human excr traps (RNH); 1 female: [MALAYSIA]: RMNH/sa32c, Sabah: Mt Kinabalu NP, Pongai Ritan, 4.24°N 115.42°E, alt. m 0500-0600, 08-11/xi/1987, KRIKKEN & ROMBAUT, multistr evergr forest, 2 cow dung traps (RNH); 1 female: [MALAYSIA]: RMNH/sa15, Sabah: Danum Valley, Danum Valley Fld, Centre (E3), alt. m 0100-0200, 24-28/x/1987, KRIKKEN & ROMBAUT, multistr evergr forest, 4 human excr traps (RNH); 1 female: [MALAYSIA]: RMNH/Leiden, N. Borneo, SW Sabah, Beaufort 105 km S of: Long Pasia area, Sungai Ritan, 4.24°N 115.42°E, 1160-1200 m, 8-10 Apr 1987, Leg. J. VAN TOL, Untouched submontane evergreen tropical rainforest, Four pitfalls baited with human faeces (RNH); 1 female: [MALAYSIA]: RMNH/pw73, W Malaysia, NNW Kuala Lumpur, Serendah Forest Res, alt. m 300, 05-07.i.1986, J. KRIKKEN, multistr evergreen forest, 8 human excr traps (RNH, JAL); 1 male 1 female: [INDONESIA]: RMNH/pw68a, C. Sulawesi: Palu region, Tawaeli-Tomboli rd, alt. m 0250, 20-22.xii.1985, J. KRIKKEN, second-growth forest/coffee, nr rivulet, 2 human excr traps (RNH, JAL).

**DISTRIBUTION.** - Malaya, Borneo (Sabah), Sulawesi.

BIOLOGICAL DATA. - *P. navus* appears to be a submontane species (100-1200 m); it has been collected from different types of pitfalls (fish traps, human faeces traps, cow dung traps) in evergreen forests.

***Parachilocoris semialbidus* (WALKER)**

(figs. 196-197)

*Aethus semialbidus* WALKER, 1867: 160; LETHIERRY & SEVERIN, 1893: 81.

*Chilocoris semialbidus*: DISTANT, 1899a: 223.

*Cydnopeilus minutus*, not of DISTANT, 1901a: 105 [paralectotype male].

*Parachilocoris minutus*, not of DISTANT: HORVÁTH, 1919: 255.

*Chilocoris solenopsidis* BREDDIN, 1904: 408; BERGROTH, 1908: 150; GAEDIKE, 1971: 99, syn. with *P. semialbidus* by Lis, 1991b: 174.

*Chilocoris?* *solenopsides* [sic!]: DISTANT, 1908: 429.

*Chilocoristoides solenopsides* [sic!]: DISTANT, 1913: 141, 1918: 119.

*Chilocoris Solenopsidis*: HORVÁTH, 1919: 254.

*Parachilocoris semialbidus*: LIS, 1991b: 174.

DIAGNOSIS. - The bicoloured dorsum, with the corium distinctly paler than the pronotum and the scutellum will mark this species as distinct from the other six in the genus.

DESCRIPTION. - Head castaneous or dark castaneous, margins sometimes blackish brown, dorsally slightly wrinkled and with several punctures between eyes (fig. 196); clypeus as long as paraclypei, and laterally slightly covered by them; two subapical clypeal hair-like setae sometimes almost indistinct; each paraclypeus with a row of 4 submarginal hair-like setae (two long, two short); eyes dark brown or blackish brown, ocular index 1.50-1.94; ocelli yellowish brown or orange, interocellar index about 7.0-11.0; antennae brown; rostrum brown or pale brown, surpassing anterior coxae.

Pronotum of the same colour as head, polished, transverse uninterrupted impressed line with crowded punctures; anterior lobe laterally with a few blackish brown punctures; posterior lobe with numerous blackish brown distinctly separated punctures; each lateral margin with 2 submarginal setigerous punctures - one at the middle, the second at the posterolateral angle.

Scutellum of the same colour as pronotum, disc almost evenly punctured, punctures of the same size or larger than those on pronotum.

Corium entirely or at least mesocorium yellowish or pale brown, usually translucent; clavus with two rows of punctures (among them one partial); mesocorium with two rows of punctures paralleling clavo-corial suture (one distinct and accompanied by impressed line, the second without impressed line), apical half with numerous scattered punctures; membrane hyaline, yellowish brown or slightly milky brown, distinctly surpassing the extremity of abdomen.

Propleuron with several distinct punctures in depression; evaporatoria typical of the genus.

Sternites almost blackish brown, glossy in the middle, lateral parts with numerous punctures bearing distinct hairs.

Legs yellowish brown, not specifically modified.

Paramere as in fig. 197.

Measurements (male and female respectively): body length 2.93-4.15, 2.03-3.83; body width 1.65-2.07, 1.09-2.02; head length 0.52-0.56, 0.48-0.67; head width 0.88-0.99, 0.78-0.90; pronotum length 1.05-1.22, 0.90-1.10; pronotum width 1.79-2.06, 1.15-2.00; scutellum length 0.87-0.98, 0.79-1.10; scutellum width

1.10-1.26, 0.82-1.27; antennal segments: 0.14-0.20 : 0.07-0.09 : 0.28-0.31 : 0.26-0.29 : 0.31-0.34, 0.12-0.16 : 0.07-0.08 : 0.27-0.31 : 0.25-0.27 : 0.29-0.32.

#### TYPE MATERIAL EXAMINED

Lectotype male of *Aethus semialbidus* WALKER (designated by LIS, 1991b: 174): [CHINA]: Amoy, China, 6047; Type; 74. *Aethus semialbidus* WALKER; Brit. Mus. Type No. Hem. 349; Lectotype det. J.A. LIS 1990 (BMNH).

Lectotype female of *Chilocoris solenopsidis* BREDDIN (designated by GAEDIKE, 1971: 99): [INDIA]: Bombay, b. *Solenopsis rufa*, leg. ASSMUTH; *Chilocoris solenopsidis* BREDDIN, Typus; coll. BREDDIN; Lectotypus; des. H. GAEDIKE 1968; DEI Eberswalde (DEI).

Paralectotype male of *Cydnopeplus minutus* DISTANT: [BURMA]: Carin, Asciuii Ghecú, 1400-1500m, L. FEA, III-IV.88; Type, *minutus* DIST., *Cydnopeplus minutus* DIST. (type); DISTANT Coll. 1911-383 (BMNH).

#### OTHER MATERIAL EXAMINED (3 males, 4 females)

INDIA: Calcutta, 1 male, STAUDINGER & BANG-HAAS, det. as *Parachilocoris minutus* DIST. by KERZHNER (ZIP); Calcutta, 1 male, det. as *minutus* D. by HORVÁTH (HNHM).

NEPAL: 215 Dhading Distr., Ankhu Khola Tal, Ankhu Sangu, 650 m, Kulturland, Waldreste, 1 female 24/25 Jul 83, MARTENS & SCHAWALLER (JMC); 340 Taplejung Distr., from Sablako Pass to Limbudin, tree-rich cultural land, bushes, 1600-1300 m, 1 male 22 Apr 1988, J. MARTENS & W. SCHAWALLER leg. (JAL).

VIETNAM: Hanoi, Hotel Kim lien, 1 female 28-31.V.1966, Exp. Gy. TOPAL, No. 593, collected on lamp (HNHM).

INDONESIA: Sumatra, Deli, 1 female, de BUSSY, Coll. Dr. D. MAC GILLAVRY (ZMA); Java, 1 female, J. SONNEVELDT, Measter Cornelia (RNH).

DISTRIBUTION. - India, Nepal, Burma, Vietnam, South China (Fujian), Indonesia (Sumatra, Java).

BIOLOGICAL DATA. - The type of *P. solenopsidis* was collected from a nest of *Solenopsis rufa* FERR. (BREDDIN, 1904). Two examined specimens have been collected in a tree-rich cultural land in mountains of Nepal.

### Genus *Peltoxys* SIGNORET

*Peltoxys* SIGNORET, 1881c: XXXIII.

*Heurnius* DISTANT, 1901a: 105, syn. by LIS, 1991a: 20.

DIAGNOSIS. - The genus is best diagnosed by the set of following characters: the evaporative area on the mesopleuron not subquadrate, occupying only a small part of the segment; the polished band of the peritreme long, narrow and without posteriorly curved apical lobe; the body length not exceeding 5.0 mm; the costa without setigerous punctures; the head subquadrate, apically truncated; the clypeus subapically with two pegs, and each paraclypeus submarginally with hair-like setae.

DESCRIPTION. - Head short, subquadrate, apically truncated; clypeus broadening apicad, subapically with two short pegs; each paraclypeus with 2-3 submarginal punctures bearing hair-like setae; eyes protruding, ocelli conspicuously developed; antennae 5-segmented.

Pronotum broader than long, undivided into lobes; umbones not swollen; each lateral margin with a row of several submarginal setigerous punctures.

Scutellum triangular, broader than long, apex almost sharp.

Corium short, distinctly divided into clavus, meso- and exocorium; lateral margins parallel; membrane large, but narrower than abdomen and continued proximally in a V-shaped notch to meet the apex of the medial fracture; costa with a few hardly visible setigerous punctures, and several short hair-like bristles.

Propleural depression distinct; anterior convexity large, with crowded puncturation; evaporative area on mesopleuron small, apex of peritreme without posteriorly curved lobe.

Sternites with fine yellowish, semierect hair-covering.

Tibiae distinctly spined; the anterior distally slightly widened, the posterior and the middle slightly compressed dorsally.

Paramere with long, distally pectinated hypophysis (figs. 199, 201).

TYPE OF GENUS. - *Cimex brevipennis* FABRICIUS, 1798 (= *Peltoxys pubescens* SIGNORET, 1881), by automatic fixation; of *Heurnius*, *Heurnius typicus* DISTANT, 1901, by original designation.

REMARK. - The genus includes two Oriental species (*P. brevipennis*, *P. typicus*), and one distributed in tropical Africa (*P. thaumastellus* Lv.).

LINNAVUORI (1993) in his revision of the *Cydnidae* of West, Central and North-East Africa treated *Peltoxys* as a genus of uncertain position. In the present paper the genus is tentatively placed within the tribe *Cydnini*; this decision is based mainly on the type of the trichobothrial arrangement, a shape of the scutellum and the corium, the structure of evaporatoria, the peritreme and a shape of the male genitalia.

#### Key to species of *Peltoxys*

1. 2nd antennal segment 1.1-1.4 times shorter than the 3rd; body 1.9-2.0 times longer than broad; segments of connexivum spined (fig. 198) . . . . . ***brevipennis*** (p. 116)
- . 2nd antennal segment minute, about 3 or more times shorter than the 3rd; body 2.1-2.3 times longer than broad; segments of connexivum not spined, only sometimes with small tubercles (fig. 200) . . . . . ***typicus*** (p. 118)

#### ***Peltoxys brevipennis* (FABRICIUS)**

(figs. 198-199)

*Cimex breuipennis* [lap.] FABRICIUS, 1798: 536.

*Cydnus breuipennis* [lap.]: FABRICIUS, 1803: 187.

*Legnotus brevipennis*: SCHIÖDTE, 1847: 464 [emend.]; STÅL, 1868: 8, 1869: 121, 1876: 22.

*Aethus brevipennis*: WALKER, 1867: 158, 1873: 13.

*Peltoxys pubescens* SIGNORET, 1881c: XXXIV, syn. with *P. brevipennis* by SIGNORET, 1881f: CXXXVI.

*Peltoxys brevipennis*: SIGNORET, 1881a: 655, 1881f: CXXXVI, 1884a: 522 [part]; ATKINSON, 1887: 59 [part]; LETHIERRY & SEVERIN, 1893: 67 [part]; DISTANT, 1902: 106 [part]; LINNAVUORI, 1977: 49; Hsiao et al., 1977: 45; LIS, 1991a: 21, 1991b: 174.

*Heurnius erebus* DISTANT, 1901a: 106, 1902: 102; BERGROTH, 1908: 150, syn. with *P. brevipennis* by LIS, 1991a: 21.

Misidentifications: SIGNORET, 1884a: 522 [part]; ATKINSON, 1887: 59 [part]; LETHIERRY & SEVERIN, 1893: 76 [part]; BERGROTH, 1915: 170.

DIAGNOSIS. - The species differs from *P. typicus* in the body length/width ratio, spined lateral margins of the abdominal segments, the 2nd antennal segment almost equal in length to the 3rd, and in the shape of paramere (fig. 199).

DESCRIPTION. - Head (fig. 198) black or brownish black, coarsely punctured; each lateral margin of paraclypei slightly reflected upwards, submarginally with 2-3 hair-like setae; clypeus broadening apicad, with two subapical pegs; eyes brown or

blackish brown, ocular index 2.60-3.30; ocelli grey or brown, interocellar index about 4.0-6.0; antennae dark brown, 2nd segment only slightly shorter (1.1-1.4 times) than the 3rd; rostrum piceous, extending behind middle coxae.

Pronotum black or brownish black, disc coarsely punctured with exception of calli; anterior margin deeply sinuated, the posterior almost straight; each lateral margin with a row of 8-10 submarginal setigerous punctures.

Scutellum black, distinctly punctured with exception of anterolateral smooth spots.

Corium black, blackish brown or brown, with distinct punctures arranged in rows; costal margins parallel, with 2 setigerous punctures, and several short hair-like bristles; membrane fuscous, large, narrower than abdomen (fig. 198)

Depression of propleuron with distinct short parallel grooves; anterior convexity with crowded punctures and numerous short hairs close to anterior margin.

Sternites blackish brown, coarsely and densely punctured, with yellowish semierect hair-covering; lateral margins of segments distinctly spined (fig. 198).

Legs brown, not specifically modified; tarsi yellowish brown.

Paramere as in fig. 199.

Measurements (male and female respectively): body length 2.80-4.48, 2.90-3.90; body width 1.40-2.01, 1.49-1.98; head length 0.44-0.68, 0.43-0.70; head width 0.66-0.90, 0.68-0.85; pronotum length 0.94-1.47, 1.01-1.20; pronotum width 1.66-2.10, 1.56-1.95; scutellum length 0.71-0.98, 0.64-0.83; scutellum width 1.07-1.28, 0.96-1.21; antennal segments: 0.19-0.22 : 0.23-0.28 : 0.27-0.36: 0.37-0.42 : 0.48-0.49, 0.14-0.20 : 0.18-0.25 : 0.25-0.36 : 0.34-0.46 : 0.39-0.52.

#### TYPE MATERIAL EXAMINED

Lectotype male of *Cimex brevipennis* FABRICIUS (present designation): [INDIA]: Tranguebaria, Daldorff, Mus. de Sehestedt, *Cydnus brevipennis* FABR.; Type; male (ZMC).

Lectotype male of *Peltoxyx pubescens* SIGNORET (designated by LIS, 1991a: 21): [VIETNAM]: Saigon, Coll. SIGNORET; *pubescens*, det. SIGNORET; Lectotype, *pubescens* SIGN., labelled by R.C. FROESCHNER 59; Coll. Nat.-Mus. Wien (NhMW).

Lectotype male of *Heurnius erebus* DISTANT (designated by LIS, 1991a: 22): [BURMA]: Rangoon, Birmania, FEA VI 1887; Typus; *erebus* DIST.; *Heurnius erebus* DIST. Typus!; Museo Civico di Genova; Lectotype det. J.A. LIS (MCSN).

Paralectotypes of *Heurnius erebus* DISTANT: 1 male: [BURMA]: Rangoon, Birmania, FEA V-VII 1877; Type; *erebus* DIST., *Heurnius erebus* DIST. (Type); DISTANT Coll. 1911-383; Brit. Mus. Type No. Hem. 356; Paralectotype det. J.A. LIS (BMNH); 1 female: [BURMA]: Rangoon, Birmania, FEA V-VII 1887; Paratype, DISTANT Coll. 1911-383; *Heurnius erebus* DIST.! (BMNH); 1 female: [BURMA]: Palon (Pegú), L. FEA VIII.IX.87; Paratype; DISTANT Coll. 1911-383; *Heurnius erebus* DIST.! (BMNH).

#### OTHER MATERIAL EXAMINED (6 males, 11 females)

INDIA: Bandra, India, 1 male, Dr. JAYKAR, 1905-152 (BMNH); Coimbatore, 1 male 5.VII.12, R.S.V. coll. (BMNH); Dehra Dun, India, G. ROGERS, 1 male, 1906-202 (JAL); S. India, Karikal, 1 female VII-1954, P. Susai NATHAN (RNH); S. India, Karikal, Karumbagaram, 2 females 1 male VII 1954, Rec. P.S. NATHAN, coll. R.I.Sc.N.B. (IRSNB); Bombay, 3 females, DIXON, DISTANT coll. 1911-383, Brit. Mus. (BMNH).

SRI LANKA: Ceylon, S. Prov., Hemmeliya, 2mls E Baddegama, 10mls N Galle, 1 female 27.I.62, Loc. 26, Lund University Ceylon Expedition 1962, BRINCK-ANDERSSON-CEDERHOLM, Brit. Mus. 1970-706, det. as *Peltoxyx brevipennis* FABR. by G.M. BLACK 1969 (BMNH).

BURMA: Palon, Pegú, VIII.IX 87, L. FEA: 1 female, det. as *Macrymenus membranaceus* SIGN. (IRSNB), 1 female, det. as *Heurnius erebus* DIST. by OSHANIN (ZIP), 1 female, Birma, Leonardo FEA leg., vend. 1.I.1895, det. as *Geotomus birmanus* BREDD. by G. BREDDIN (ZIZM).

VIETNAM: Long Xuyen, Cochinchine, DORR., 1 male, Muséum Paris, coll. E. FLEUTIAUX 1919 (MNHN); Saigon, 1 female, Coll. SIGNORET, det. as *pubescens* by SIGNORET (NhMW).

CAMBODIA: Kompong Toul, 1 male, juin 1913, 29 k. au Sessous de P. Penk, Cambodge, PLAME, Muséum Paris (MNHN).

DISTRIBUTION. - India, Burma, Sri Lanka, South China (Yunnan), Vietnam, Cambodia.

REMARK. - As it was already indicated in one of my previous papers (Lis, 1991a) a part of the specimens from India determined as *P. brevipennis* (SIGNORET, 1884a; ATKINSON, 1887; BERGROTH, 1915) pertained actually to *P. typicus*.

### *Peltoxys typicus* (DISTANT)

(figs. 200-202)

*Peltoxys brevipennis*, not of FABRICIUS: SIGNORET, 1884a: 522 [part]; ATKINSON, 1887: 59 [part]; BERGROTH, 1915: 170; LETHIERRY & SEVERIN, 1893: 76 [part].

*Heurnius typicus* DISTANT, 1901a: 106, 1902: 102; BERGROTH, 1908: 50.

*Peltoxys blissiformis* HSIAO in HSIAO et al., 1977: 46 & 296; syn. with *P. typicus* by LIS, 1991a: 22.

*Peltoxys typicus*: LIS, 1991a: 22.

DIAGNOSIS. - The species differs from *P. brevipennis* in its body length/width ratio, its not spined lateral margins of the abdominal segments, the 2nd antennal segment conspicuously shorter than the 3rd, and in a different shape of the paramere (fig. 201).

DESCRIPTION. - Head (fig. 200) coarsely punctured, black, blackish brown or brown; clypeus broadened apicad, apical angles prominent and with two subapical pegs; each paraclypeus submarginally with 2-3 hair-like setae; eyes brown, dark brown or blackish brown, ocular index 2.00-2.90; ocelli light brown or brown, interocellar index about 5.0-7.0; antennae from pale to dark brown, 2nd segment minute, distinctly shorter than the 3rd; rostrum pale brown, almost reaching anterior margin of middle coxae.

Pronotum black, blackish brown or brown, disc coarsely punctured (fig. 200, 202), laterally with numerous, sometimes almost indistinct short hairs; anterior margin slightly sinuated, the posterior almost straight; each lateral margin with a row of 8-9 submarginal setigerous punctures.

Scutellum of the same colour as pronotum; disc densely punctured, except anterolateral smooth spots (figs. 200, 202).

Corium brown or blackish brown, sometimes somewhat lighter than scutellum; punctures arranged in rows; costal margins parallel, each with 1-2 hardly visible setigerous punctures, and several short hair-like bristles; membrane whitish, sometimes slightly browned, narrower than abdomen.

Anterior convexity of propleuron coarsely punctured.

Sternites black, blackish brown or chocolate brown, densely punctured, and with yellowish semierect hair-covering; lateral margins of segments without spines (figs. 200, 202), sometimes only small tubercles are present.

Legs brown, not specifically modified, tarsi pale brown.

Paramere as in fig. 201.

Measurements (male and female respectively): body length 2.81-3.61, 2.58-3.63; body width 1.28-1.61, 1.17-1.62; head length 0.56-0.71, 0.46-0.52; head width 0.42-0.76, 0.53-0.73; pronotum length 1.09-1.12, 0.78-1.19; pronotum width 1.41-1.62, 1.19-1.62; scutellum length 0.71-0.77, 0.52-0.70; scutellum width 1.05-1.01, 0.68-1.00; antennal segments: 0.18-0.25 : 0.12-0.13 : 0.37-0.38 : 0.41-0.42 : 0.49-0.51, 0.11-0.17 : 0.07-0.10 : 0.21-0.36 : 0.24-0.42 : 0.35-0.49.

#### TYPE MATERIAL EXAMINED

Lectotype male of *Heurnius typicus* DISTANT (designated by LIS, 1991a: 24): [BURMA]: Carin, Asciiui Ghécú, 1400-1500m, L. FEA III-IV 88; Typus; *typicus* DIST.; *Heurnius typicus* DIST. Typus!; Museo Civico di Genova; Lectotype det. J.A. LIS (MCSN).

Paralectotype female of *Heurnius typicus* DISTANT: [BURMA]: Carin, Asciiui Ghécú, 1400-1500m, L. FEA



III-IV 88; Type; *typicus* DIST.; *Heurnius typicus* DIST.; DISTANT Coll. 1911-383; Brit. Mus. Type No. Hem. 357; Paralectotype det. J.A. LIS (BMNH).

OTHER MATERIAL EXAMINED (4 males, 6 females)

INDIA: Belgaum, 2000ft, 3 females 1 male IV.08, D.N., PUSA coll. (BMNH, JAL); Indes Or., 1 female 2 males (MNH, JAL); Jabalpur, Madhya Pradesh, 1 female 30.IX.1967 (JAL); South India, Anamalai Hills, Cinchona, 1 female V 1969, 3500 ft, P.S. NATHAN (ZMA).

VIETNAM: Vietnam, isl. Con Dao, 1 male, agrocoenose, PONOMARENKO leg. (JAL).

DISTRIBUTION. - India, Burma, South China (Yunnan), Vietnam.

BIOLOGICAL DATA. - One specimen has been collected in an agrocoenose.

REMARKS. - I have not been able to study the type-material of *Peltoxys blissiformis* HSIAO; my requests for the loan of material from the Zoological Institute of Academia Sinica have been ignored.

### Genus *Pullneya* HORVÁTH

*Pullneya* HORVÁTH, 1919: 268.

DIAGNOSIS. - The genus is best diagnosed by the set of following characters: the evaporative area on the mesopleuron small, not subquadrate, occupying only a small part of the segment; the polished band of the peritreme without posteriorly curved rounded lobe (fig. 205); the head in outline semicircular; each paraclypeus bearing only hair-like setae; the clypeus free and without setigerous punctures (fig. 203); the membranal suture straight (fig. 204).

DESCRIPTION. - Body in outline similar to that of the genus *Parachilocoris*, but more ovate.

Head in semicircular, clypeus free, without setigerous punctures (fig. 203); paraclypei bearing only hair-like setae; eyes protruding, ocelli present; antennae 5-segmented, 2nd segment minute.

Pronotum broader than long; umbones slightly swollen, only partly covering posterolateral margins; each lateral margin with a row of submarginal setigerous punctures; disc undivided into lobes.

Scutellum triangular, broader than long, apex slightly rounded.

Corium distinctly longer than scutellum; clavus very short, its distal part covered by scutellum; costa without setigerous punctures, but with a row of short hair-like bristles; membranal suture straight.

Evaporatoria as in fig. 205.

Anterior tibiae only slightly expanded, margins with distinct spines (fig. 207); middle and posterior tibiae almost cylindrical (fig. 206).

Paramere with short hypophysis bearing two conspicuous teeth (fig. 208).

TYPE OF GENUS. - *Pullneya meracula* HORVÁTH, 1919, by original designation.

REMARKS. - The genus was originally placed within the subfamily *Sehirinae* (*Sehiraria* of HORVÁTH, 1919); the present study shows with no doubt it belongs to the tribe *Cydnini* of the subfamily *Cydninae*.

***Pullneya meracula* HORVÁTH**

(figs. 203-208)

*Pullneya meracula* HORVÁTH, 1919: 269.

DIAGNOSIS. - This is the only known species of the genus.

DESCRIPTION. - Head (fig. 203) dark castaneous, dorsally distinctly punctured with exception of posterior part and anterior two thirds of clypeus; the latter without setigerous punctures; each paraclypeus submarginally with 2 hair-like setae; eyes grayish brown, ocular index 2.82; ocelli yellowish brown, interocellar index 5.0; antennae light brown, 3rd, 4th and 5th segments darker basally; rostrum yellowish brown, reaching anterior margin of middle coxae.

Pronotum dark castaneous, lateral parts blackish brown; disc almost entirely (except for calli) densely punctured, punctures of the same size as those on head; each lateral margin with a row of 6 submarginal setigerous punctures (fig. 204).

Scutellum of the same colour as pronotum, disc evenly punctured (fig. 204); punctures slightly larger than those on pronotum and head.

Corium brown, somewhat lighter than pronotum and scutellum, with punctures slightly smaller than those on scutellum; clavus short with one row of punctures; mesocorium with two rows of punctures paralleling clavo-corial suture and one row paralleling exocorium, the remaining surface with scattered punctures (fig. 204); exocorium distally with several punctures; costa without setigerous punctures, but with a row of short hair-like bristles; membrane hyaline, slightly browned, reaching the tip of abdomen.

Propleuron chocolate brown, depression with a few punctures, anterior convexity with large black punctures; evaporatoria as in fig. 205.

Sternites brown, glossy, with punctures along posterior margins; lateral parts punctured and wrinkled, with several hair-like bristles; VII sternite very broad.

Legs yellowish brown.

Paramere as in fig. 208.

Measurements (male only): body length 2.42; body width 1.45; head length 0.41; head width 0.57; pronotum length 0.78; pronotum width 1.33; scutellum length 0.73; scutellum width 0.87; antennal segments: 0.11 : 0.05 : 0.21 : 0.18 : 0.27.

## TYPE MATERIAL EXAMINED

Lectotype male of *Pullneya meracula* HORVÁTH (present designation): India or.; Kodaikanal, Pullney Hills; *meracula* H. det. HORVÁTH; *Pulneya* [!] *meracula* (HNHM).

DISTRIBUTION. - India.

**Tribe *Geotomini* WAGNER***Geotomini* WAGNER, 1963: 113.

DIAGNOSTIC CHARACTERS. - Scutellum long, extending beyond a half length of hemelytra, usually longer than broad; peritreme not extending laterally as elevated polished band; penis with sclerified and pigmented theca.

TYPE OF TRIBE. - Genus *Geotomus* MULSANT & REY, 1866.

**DISTRIBUTION.** - Members of the *Geotomini* have been reported from all regions of the world.

**REMARK.** - A majority of the *Cydnidae* taxa belongs just to this tribe; it is represented by 18 genera in the studied area .

#### Key to genera of *Geotomini*

1. Antennae 4-segmented, 2nd segment very long ..... 2.
- Antennae 5-segmented, 2nd segment varying in length ..... 3.
2. Pronotum and scutellum with distinct, deep sculpture (tuberosities, deep furrows - fig. 315); head in outline triangular, ocelli absent; evaporatoria and peritreme as in fig. 319 .  
..... **Geopeltus** (p. 189)
- Pronotum and scutellum punctured only (fig. 214); head in outline semicircular, ocelli present; evaporatoria and peritreme as in figs. 212, 215, 226, 230. .... **Adrisa** (p. 122)
3. Apex of peritreme either lobe-like or loop-like, totally more or less polished (figs. 269, 272, 277, 281, 284), its posterior margin without modification ..... 4.
- Apex of peritreme with neither lobe-like nor loop-like auricle, posterior margin with hook-like, claw-like, tooth-like, tongue-like or flap-like process (figs. 253, 258, 263) .. 7.
4. Submargins of paraclypei with hair-like setae only, occasionally one pair of almost indistinct peg-like setae is present (figs. 268, 275, 279, 320) ..... 5.
- Submargins of paraclypei with hair-like and numerous distinct peg-like setae (fig. 283) . .  
..... 6.
5. Evaporatoria on meso- and metapleuron either very small, reduced, just outlining peritreme or absent (figs. 269, 272, 277), lateral area of meso- and metapleuron coarsely punctured, usually with oblique furrows ..... **Alonips** (p. 154)
- Evaporatoria on meso- and metapleuron large, occupying about a half of meso- and metapleural surface (figs. 321, 326, 327, 328), lateral area of meso- and metapleuron not as above ..... **Geotomus** (p. 190)
6. Evaporatorium on mesopleuron large, occupying at least one third of pleural surface (figs. 412, 414, 415). ..... **Microporus** (p. 244)
- Evaporatorium on mesopleuron very small, sometimes almost invisible or absent (figs. 281, 284) ..... **Byrsinus** (p. 163)
7. Submargins of head with hair-like setae, peg-like setae never present ..... 8.
- Submargins of head with both hair-like and peg-like setae ..... 13.
8. Anterior tibiae distinctly produced beyond the point of tarsal insertion, thus the tarsus is not arising apically; lateral margins of head expanded and upcurved .....  
..... **Lactistes** (p. 198)
- Anterior tibiae not produced beyond the point of tarsal insertion, the tarsus arising apically; lateral margins of head normally developed ..... 9.
9. Umbones of pronotum strongly swollen, concealing posterolateral margins (figs. 360, 366, 375, 382, 403) ..... **Macroscythus** (p. 209)
- Umbones of pronotum not swollen, posterolateral margins visible from upper side view (figs. 290, 296, 301, 311) ..... 10.
10. Costal margins serrated (fig. 312); rostrum very long, surpassing the VII abdominal sternite ..... **Gampsotes** (p. 187)

- Costal margins straight; rostrum reaching at best the posterior coxae . . . . . 11.
- 11. Apex of peritreme almost straight, posteriorly with a blunt projection, which is a part of the posterior ridge of peritreme (figs. 286, 288) . . . . . **Fromundiellus** (p. 169)
- Apex of peritreme kidney-like, posteriorly with tooth-like or spine-like process (sometimes small), which is a part of the anterior ridge of peritreme (figs. 236, 292, 297, 302, 305) . . . . . 12.
- 12. Submargins of head with long hair-like setae, stouter than those of the genus *Fromundus* (fig. 235); middle and posterior tibiae broadened and slightly compressed; posterior femur without subapical tooth; each lateral margin of pronotum with 9-15 submarginal setigerous punctures; penis robust, subapically distinctly thickened (figs. 234, 238, 240); larger species (5.5-12.0 mm) . . . . . **Aethoscytus** (p. 134)
- Submargins of head with short hair-like setae, thicker than those of the genus *Aethoscytus* (figs. 291, 295, 304); middle and posterior tibiae neither broadened nor compressed; posterior femur usually with more or less distinct subapical tooth on the dorsal margin; each lateral margin of pronotum with 4-7 submarginal setigerous punctures; penis slender; smaller species (3.0-7.0 mm) . . . . . **Fromundus** (p. 173)
- 13. Apex of peritreme posteriorly flap-like or hood-like, with either broad or narrow polished band or lobe (figs. 421, 450, 454, 474, 484, 505, 508, 514) . . . . . 14.
- Apex of peritreme posteriorly with more or less distinct hook-like, tooth-like or claw-like process (figs. 243, 253, 258, 263, 266, 330, 416) . . . . . 16.
- 14. Apex of peritreme posteriorly with narrow polished band (figs. 421, 450) . . . . . **Pseudoscoparipes** (p. 250)
- Apex of peritreme posteriorly with broad polished band or lobe (figs. 454, 474, 498, 505, 508, 514) . . . . . 15.
- 15. Posterior tibiae distinctly broadened and compressed, dorsal surface with a row of close, stiff, short hairs in male specimens (figs. 459); larger species, 9.75-15.8 mm in length . . . . . **Scoparipes** (p. 261)
- Posterior tibiae only slightly broadened, without a row of stiff hairs on dorsal surface in male specimens; smaller species, 6.52-9.40 mm in length . . . . . **Scoparipoides** (p. 277)
- 16. Postocular part of head prolonged into a converging "neck" (fig. 325, 329); anterior margin of pronotum deeply emarginated (fig. 325); two setigerous punctures on clypeus placed at one fourth of its length from the apex (fig. 329); eye without apical spine . . . . . **Katakadia** (p. 196)
- Postocular part of head and anterior margin of pronotum developed not as above; two setigerous punctures on clypeus, if present, placed at its submargin (figs. 256, 261); eye with apical spine . . . . . 17.
- 17. Posterior tibiae distinctly broadened and compressed; apex of peritreme posteriorly with slender claw-like tooth (fig. 416) . . . . . **Paraethus** (p. 248)
- Posterior tibiae usually slender, only sometimes slightly broadened; apex of peritreme posteriorly with short, usually blunt, not claw-like tooth (figs. 253, 258, 263, 266) . . . . . **Aethus** (p. 138)

### Genus *Adrisa* AMYOT & SERVILLE

*Adrisa* AMYOT & SERVILLE, 1843: 89.

*Geobia* MONTROUZIER, 1858: 245, syn. with *Adrisa* by SIGNORET, 1881a: 622.

*Acatalectus* DALLAS, 1851: 122, syn. with *Adrisa* by SIGNORET, 1881a: 622.

**DIAGNOSIS.** - The 4-segmented antennae distinguish the members of this genus from all others within the tribe *Geotomini*, except *Geopeltus*. The two genera can

be easily separated from each other by the different sculpture of the dorsal body surface (tuberosities and deep furrows in *Geopeltus*, punctures in *Adrisa*), the head shape (triangular in *Geopeltus*, semicircular in *Adrisa*), and the absence (in *Geopeltus*) vs. presence (in *Adrisa*) of ocelli.

DESCRIPTION. - Body large, 9.62-21.80 mm in length; head, pronotum and scutellum shining, corium always dulled.

Head in outline semicircular, broader than long, dorsal surface usually wrinkled and punctured; clypeus slightly shorter than paraclypei, with two (*nitidicollis*-group) or without (*nigra*-group) subapical setigerous punctures; each paraclypeus with either 2-3 (*nigra*-group) or 3-7 (*nitidicollis*-group) setigerous punctures bearing hair-like setae (setae may be torn out and therefore sometimes absent); eyes large and rounded, each without apical spine; ocelli distinctly developed; antennae 4-segmented, 2nd segment very long.

Pronotum broader than long; disc conspicuously punctured, undivided into lobes; umbones not swollen; each lateral margin with or without submarginal setigerous punctures; anterior margin more or less insinuated.

Scutellum longer than broad, distinctly punctured; basal and lateral rows of punctures distinctly developed; apex almost sharp.

Corium divided into clavus, meso- and exocorium, distinctly punctured; clavus with a few rows of punctures; costa with or without setigerous punctures; membrane normally developed, not reduced, usually with dark or light irregular patches; membranal suture straight.

Propleuron sometimes wrinkled, depression with numerous large punctures; evaporatoria large, apex of peritreme with polished, somewhat recurved lobe on the posterior margin.

Sternites glossy in the middle, lateral two thirds distinctly punctured, sometimes also wrinkled.

Anterior tibiae distinctly expanded, margins with strong spines; middle and posterior tibiae compressed, with numerous spines on margins; anterior, middle and posterior femora bearing setae, spines or teeth.

Paramere stout, penis only slightly pigmented.

TYPE OF GENUS. - *Adrisa nigra* AMYOT & SERVILE, 1843, by monotypy; of *Geobia*, *Geobia numeensis* MONTROUZIER, 1858, subsequent designation by HORVÁTH, 1919; of *Acatalectus*, *Acatalectus rugosus* DALLAS, 1851, subsequent designation by LIS, 1992a.

REMARKS. - Oriental species of the genus can be easily divided into two groups (see LIS, 1992a). Because the genus includes also numerous, yet not studied species distributed in the Australian Region I have decided not to give a rank of subgenera to the groups, until my study on the Australian *Cydnidae* is completed.

#### Key to species-groups of *Adrisa*

1. Clypeus without subapical setigerous punctures (figs. 211, 219, 222) ..... ***nigra*-group** (p. 124)
- Clypeus with two subapical setigerous punctures (figs. 224, 229) ..... ***nitidicollis*-group** (p. 131)

**nigra-group**

Species of this group are best diagnosed by the clypeus without subapical setigerous punctures, the paraclypei with 2-3 primary setigerous punctures, and the costa either with one or without setigerous puncture.

Key to species of *nigra*-group

1. Costa with 1 setigerous puncture. . . . . 2.
- Costa without setigerous punctures . . . . . 3.
2. Each paraclypeus with 2 primary setigerous punctures (fig. 211); head almost impunctate; paramere with long hypophysis (fig. 213); ductus seminis short . . . . . *nigra* (p.127)
- Each paraclypeus with 3 primary setigerous punctures (fig. 219); head densely punctured; paramere with short hypophysis (fig. 220); ductus seminis long (fig. 221) . . . . . *romani* (p. 129)
3. Ocular index not exceeding 2.4 (2.11-2.32); paramere as in fig. 223 . *sumatrana* (p. 130)
- Ocular index exceeding 2.4 (2.47-3.32); paramere not as above . . . . . 4.
4. Posterior tibiae basally with tubercle (in female) or large tooth (in male) (fig. 217); paramere as in fig. 218 . . . . . *rawlinsi* (p. 128)
- Posterior tibiae basally straight (in female) or with a weak tubercle (in male); paramere not as above . . . . . 5.
5. Body slender, more parallel; paramere as in fig. 209 . . . . . *clara* (p. 124)
- Body robust, more oval; paramere as in fig.210 . . . . . *magna* (p. 125)

***Adrisa clara* (WALKER)**

(fig. 209)

*Acatalectus clarus* WALKER, 1868: 535.*Adrisa clara*: LETHIERRY & SEVERIN, 1893: 63; DISTANT, 1899a: 218; LIS, 1992a: 26 [as nomen dubium].*Adrisa* (?) *clara*: ATKINSON, 1887:46.*Adrisa magna*, not of UHLER: LIS, 1992a: 17 [part].

**DIAGNOSIS.** - The species is best diagnosed by the set of following characters: the costa without setigerous punctures; the ocular index exceeding 2.4 (2.67-3.00); the posterior tibiae without a basal tooth or tubercle; the body in outline almost parallel. The specimens of *A. clara* are very similar to small individuals of *A. magna*, and in such a case a shape of the paramere appears to be the best character separating both species.

**DESCRIPTION.** - Head black or blackish brown, dorsally coarsely punctured with exception of clypeus; the latter slightly shorter than and laterally somewhat covered by paraclypei; subapical part of clypeus without setigerous punctures; each paraclypeus with two primary setigerous punctures; eyes dark brown, ocular index 2.67-3.00; ocelli reddish brown or blackish brown, interocellar index 5.0-6.0; antennae dark brown; rostrum brown or dark brown, reaching middle coxae.

Pronotum black or blackish brown; disc coarsely punctured (except for calli), with deep punctures larger than those on head; each lateral margin with 1 submarginal setigerous puncture at the anterolateral angle.



Scutellum of the same colour as pronotum; disc evenly coarsely punctured, punctures of the same size as those on pronotum.

Corium dark castaneous or blackish brown, punctures smaller than those on pronotum and scutellum; clavus with 3 rows of punctures; mesocorium with two rows of punctures paralleling clavo-corial suture, the remaining surface almost evenly punctured; exocorium with dense puncturation; costa without setigerous punctures; membrane slightly either shorter or longer than abdomen, brown or milky brown with darker veins.

Propleuron blackish brown; depression, posterior convexity, and apical part of anterior convexity with numerous large punctures; apex of peritreme as in fig. .

Sternites dark castaneous or blackish brown, glossy in the middle, sides coarsely punctured, and striated.

Legs dark castaneous or blackish brown, not specifically modified.

Paramere as in fig. 209.

Measurements (male and female respectively): body length 12.19-12.95, 12.57; body width 7.05-7.43, 7.14; head length 2.02-2.17, 2.35; head width 3.21-3.49, 3.50; pronotum length 3.95-4.36, 4.25; pronotum width 6.75-7.25, 6.95; scutellum length 4.64-4.91, 5.02; scutellum width 4.11-4.75, 4.50; antennal segments: 0.70-0.93 : 1.50-1.71 : 3rd and 4th missing, 0.63 : 1.52 : 3rd and 4th missing.

MATERIAL EXAMINED (2 males, 1 female)

INDIA: Naga Hills, [?] Doloroboro [illegible handwriting], 1 male 1 female, CHENNEL, DISTANT Coll., 1911-383 (BMNH, JAL); Sikkim, 1 male, ATKINSON Coll., 92-3 (BMNH).

DISTRIBUTION. - India.

REMARKS. - *Adrisa clara* was originally described from Hindostan. In my previous paper on a review of the genus (Lis, 1992a) the species was treated as a *nomen dubium*, since I was not able to study a specimen of it (my requests for a loan of the type material from the National Museum at Melbourne, Australia, have been ignored). Therefore, the female from India (Lis, 1992a: 19) was then determined by me as *A. magna*. Now, when male specimens from India have been available for the study, it turns out that they are not conspecific with *A. magna*. Thus, it has left the species from India without a name. Since it is the only species of the genus known to occur in India, it seems for me more efficient to attribute to this species the existing name of *A. clara*, than to establish a new species. Three studied specimens match well the original description of *A. clara*, except the length of antennal segments (see Lis, 1992a: 26).

The problem whether the type from Hindostan actually represents the genus *Adrisa*, and is conspecific with the examined specimens from India can be finally solved when the material from the National Museum at Melbourne is studied.

### *Adrisa magna* (UHLER)

(fig. 210)

*Acatalectus magnus* UHLER, 1861: 222; STÅL, 1876: 27.

*Adrisa magna*: SIGNORET, 1881e: 206; ATKINSON, 1887: 45; LETHIERRY & SEVERIN, 1893: 63; DISTANT, 1901a: 101 [part], 1902: 89 [part]; KIRKALDY, 1910a: 112; MATSUMURA, 1913: 117; ESAKI, 1926: 142; WU, 1935: 267; STICHEL, 1962: 774; HSIAO et al., 1977: 49; TOMOKUNI, 1979: 104; ŠTUSÁK, 1991: 117 & 121; LIN & ZHANG, 1992: 218; Lis, 1992a: 17.

*Adeisa* [sic!] *magna*: WU, 1933: 208.

*Adrisa nigra*, not of AMYOT & SERVILLE: HSIAO et al., 1977: 48.

*Adrisa maxima* ŠTUSÁK, 1991: 117, new synonym.

Misidentifications: DISTANT, 1901a: 101 [part], 1902: 89 [part]; Lis, 1992a: 17 [part].

**DIAGNOSIS.** - This species may be recognized within the *nigra*-group by the combination of following characters: the body length exceeding 11,5 mm; the costa without setigerous punctures; the ocular index 2.47-3.32; the posterior tibiae basally with neither large tooth nor tubercle. The extremely small specimens of this species are very similar to specimens of *A. clara*, but they are more ovate and robust in outline; in such a case the shape of the genitalia is the best separating character.

**DESCRIPTION.** - Head black or blackish brown, dorsally coarsely punctured; paraclypei slightly longer than clypeus, sometimes joined in front of it; clypeus without subapical setigerous punctures; each paraclypeus with two primary setigerous punctures; eyes black or blackish brown, ocular index 2.47-3.32; ocelli brown or reddish brown, interocellar index 4.0-6.0; antennae brown, 4th segment usually entirely, and 3rd in apical two thirds yellow, yellowish or pale brown; rostrum brown or yellowish brown, reaching either middle of mesosternum or middle coxae.

Pronotum black or blackish brown; disc coarsely punctured, except calli; each lateral margin with 1 setigerous puncture at anterolateral angle.

Scutellum black or blackish brown, disc densely coarsely punctured with exception of anterolateral areas; apex acute, almost impunctate.

Corium dark castaneous brown or blackish brown, densely evenly punctured, punctures smaller than those on pronotum and scutellum, clavus with 3-4 rows of punctures, mesocorium with punctures smaller than those on pronotum and scutellum; costa without setigerous puncture; membrane brown, with dark irregular patches.

Propleural depression, posterior convexity and apical part of anterior convexity punctured; evaporatoria and apex of peritreme typical of the genus.

Sternites black or blackish brown, glossy in the middle, sides conspicuously densely punctured.

Legs brown or dark brown, male posterior tibiae basally sometimes with small tubercle.

Paramere as in fig. 210.

Measurements (male and female respectively): body length 11.62-20.27, 12.38-21.80; body width 7.00-11.20, 7.33-11.75; head length 2.36-3.40, 2.02-3.50; head width 3.65-4.85, 3.24-5.20; pronotum length 4.09-5.00, 4.00-5.90; pronotum width 7.75-10.20, 6.76-10.90; scutellum length 5.24-7.30, 4.67-8.40; scutellum width 4.92-5.43, 4.38-6.48; antennal segments: 0.70-1.00 : 1.82-2.50 : 1.22-1.79 : 1.32-1.90, 0.70-1.17 : 1.45-2.63 : 0.98-2.03 : 1.15-1.90.

**MATERIAL EXAMINED** (9 males, 8 females)

BURMA: Carin, Asciiui Ghecu, 1400-1500m, L. FEA, III-IV 88: 2 males, Museo Civico di Genova, det as. *Adrisa magna* by DISTANT (MCSN), 1 female, DISTANT Coll. 1911-383 (BMNH); Mishmi Hills, Lohit River, 1 male 16-31.III.1935, M. STEELE, Brit. Mus. 1935-312 (BMNH).

CHINA: Formosa, Kosempo, 1 female 908.I., SAUTER, det as. *Adrisa magna* UHL. (HNHM); Formosa, SAUTER, Taihorin, 1 male 1910 I., det as. *Adrisa nigra* (HNHM); China: Taiwan, Nantou Kuantaoshi, 1 male 1-31 July 1969, Coll. CHEN YOUNG (CMNH); China: Taiwan, Taipei Yanminshan, 1 female 15 July 1969, Coll. CHEN YOUNG (CMNH); Kiautschou, China, 1 male, det as. *Adrisa nigra* (HNHM); env. Pekin, 1 female VI-VII 1954, SOSNOVSKIJ, det as. *Adrisa magna* UHL. by Yu. POPOV (JAL).

THAILAND: W. Thailand, 300m, Thung Yai Wildlife Sanctuary, 15. 30'N-98.48'E, Tak Province, Umphang District, Mae Chan/Mae Klong confluence, 1 male 27.IV-6.V.1988, at light, Edge of Karen clearing, M.J.D. BRENDLE, B.M. 1988-183 (BMNH).

VIETNAM: Tonkin, reg. de Hoa-Binh, 1 male, A. de COOMAN 1928, Muséum Paris (MNHN); Tonkin, Hoa-Binh, 1 male, (J. de COOMAN), R. OBERTHUR 1919, Muséum Paris, det as. *Adrisa magna* by We-I YANG 1935 (MNHN); Tonkin, Hoabinh, 1 female Oct. 1916, R.V. de SALVAZA, DISTANT Coll. 1911-383 (BMNH); N-Vietnam, Cuc Phuong N.P., 100km S Hanoi, 1 female 2-12.V.1991, leg. E. JENDEK 1991 (NhMW).

LAOS: Luang Prabang, Van Nham, 1 female 16.III.1918, R.V. de SALVAZA (BMNH); Haut Mekong, Nam Tienne, 1 female 14.IV.1918, R.V. de SALVAZA, Indo China, R.V. de SALVAZA 1918-1 (BMNH).

DISTRIBUTION. - Burma, China (Taiwan, Beijing, Sichuan, Hainan, Yunnan, Guangdong, Hubei, Jiangxi, Henan), Hong Kong, Thailand, Laos, Vietnam.

Recorded also from Japan and Korea; since I had no specimens from the two countries I am not quite sure whether those records really represented *A. magna*.

The record from India (Lis, 1992a) pertained to *A. clara*.

BIOLOGICAL DATA. - The species was recorded "in or on groundcover of evergreen forest" (SCHAEFER, 1988). In Thailand one specimen was collected at light on the edge of a clearing.

REMARK. - The species presents a wide range of the morphological variability, especially in the body size and the shape of the posterior process of the peritremal apex (from small angular to large either conch-shaped or ear-shaped process); parameres also differ between the specimens, but these differences are too slight (and not correlated with other characters) to allow creating a new species. The specimens from North Vietnam described by ŠTUSÁK (1991) as *Adrisa maxima* are simply very large representatives of *A. magna*, and therefore the former is treated here as a junior synonym of the latter.

Unfortunately, I have not studied the type material of the ŠTUSÁK's species, because my requests for the loan of specimens remained unanswered. The type of *A. magna* is preserved in the UHLER's collection housed in the Smithsonian Institutions, Washington; it has not been studied for the same reason as above.

### ***Adrisa nigra* AMYOT & SERVILLE**

(figs. 211-216)

*Adrisa nigra* AMYOT & SERVILLE, 1843: 89; STAL, 1876: 20; SIGNORET, 1881e: 207; LETHIERRY & SEVERIN, 1893: 63; Lis, 1992a: 15.

Misidentifications: HSIAO et al., 1977: 48; ŠTUSÁK, 1991: 117 & 121.

DIAGNOSIS. - The species differs from all within the *nigra*-group in the presence of the single setigerous puncture on the costa and the two primary setae on each paraclypeus.

DESCRIPTION. - Head blackish brown, almost black, dorsally distinctly striated and almost impunctate (fig. 211); paraclypei only slightly longer than clypeus, the latter free and without subapical setigerous punctures; each paraclypeus with two primary setigerous punctures; eyes blackish brown, ocular index 3.03; ocelli yellowish brown, interocellar index 3.7; antennae brown; rostrum light brown, surpassing middle of mesosternum.

Pronotum dark castaneous, disc coarsely punctured, calli smooth; lateral margins with no traces of setigerous punctures.

Scutellum dark castaneous, base and lateral margins almost black, punctures as large as those on pronotum, apex acute and impunctate.

Corium brown, paler than pronotum and scutellum, densely evenly punctured; punctures smaller than those on pronotum and scutellum; costa with 1 setigerous puncture; membrane reaching posterior extremity of abdomen, milky brown with irregular brown patches.

Propleural depression, anterior and posterior convexity punctured; evaporatoria

as in fig. 212, apex of peritreme as in fig. 215.

Sternites castaneous, glossy in the middle, sides punctured with both fine and coarse punctures.

Legs brown, not specifically modified.

Distal part of penis as in fig. 216, paramere as in fig. 213.

Measurements (male only): body length 9.62; body width 6.05; head length 1.36; head width 2.39; pronotum length 3.25; pronotum width 5.47; scutellum length 3.46; scutellum width 3.29; antennal segments: 0.49 : 1.15 : 0.77 : 0.85.

#### TYPE MATERIAL EXAMINED

Neotype male of *Adrisa nigra* AMYOT & SERVILLE (present designation): [INDONESIA]: Java, Coll. SIGNORET, *nigra*, det. SIGNORET, Coll. Nat.-Mus. Wien (NhMW).

DISTRIBUTION. - Java.

The record of *A. nigra* from China (HSIAO et al., 1977) pertains to extremely small specimens of *A. magna*; the records from Laos and Burma (ŠTUSÁK, 1991) pertain to *A. birmana*.

REMARKS. - There exists only the label "ADRISA. Amyot - nigra, Am. Serv. 89 - JAVA" in the collection of AMYOT & SERVILLE in the Paris Museum, but without the type specimen (it has been most probably lost - D. PLUOT-SIGWALT, pers. inf.). Because the species was hitherto always wrongly interpreted, I decided to designate the neotype of *A. nigra* in order to avoid further misinterpretations. The specimen to be the neotype was determined and described by SIGNORET for the first time (1881e).

### ***Adrisa rawlinsi*, new species**

(figs. 217-218)

DIAGNOSIS. - The new species may be easily recognized within the *nigra*-group by the presence of conspicuous either large tooth (in male specimens) or tubercle (in female specimens) at the basal part of the posterior tibiae (fig. 217).

DESCRIPTION. - Head black, dorsally coarsely punctured and slightly wrinkled; clypeus shorter than paraclypei, which are joined or almost joined in front of the former; each paraclypeus with two primary setigerous punctures bearing hair-like setae; eyes blackish brown or pale brown, ocular index 2.60-3.00; ocelli reddish brown or yellowish brown, interocellar index 4.0-5.5; 1st and 2nd antennal segment totally, and the 3rd basally blackish brown, the entire 4th and apical half of the 3rd pale brown or yellowish brown; rostrum reddish brown, surpassing middle coxae.

Pronotum black, coarsely punctured, punctures of different size - posterior part with small punctures, the anterior and lateral parts with punctures of medium size, the remaining area with large punctures; calli smooth, convex; lateral margins with no traces of submarginal setigerous punctures; anterior margin deeply emarginated.

Scutellum black, coarsely punctured except for the anterolateral oblique areas; basal half with large distinctly separated punctures, the apical with smaller and more crowded puncturation; apex elongated, almost sharp, impunctate.

Corium black, coarsely punctured and striated, punctures of the same size as those on the apical half of scutellum; clavus with three complete rows of punctures, and basally with several irregularly scattered punctures; mesocorium evenly punctured, two rows of punctures parallel clavo-corial suture; exocorium with puncturation more crowded than that of mesocorium; costa slightly

broadened, almost impunctate, without setigerous punctures; membrane usually slightly surpassing the tip of abdomen, dark brown with blackish brown and yellowish brown irregular patches.

Propleuron black; depression, posterior convexity and lateral parts of anterior convexity distinctly punctured; evaporatoria typical of the genus.

Legs black, tarsi reddish brown; posterior tibiae basally with large conspicuous tooth in male specimens, or tubercle in female specimens (fig. 217).

Paramere as in fig. 218.

Measurements (male and female respectively): body length 17.42-19.91, 20.48; body width 10.38-11.05, 11.81; head length 3.15-3.30, 3.46; head width 4.67-4.98, 5.10; pronotum length 5.71-6.19, 6.19; pronotum width 9.71-10.05, 10.76; scutellum length 6.57-6.95, 7.24; scutellum width 6.19-6.57, 6.86; antennal segments 0.98-1.05 : 2.12-2.54 : 1.46-1.68 : 1.49-1.71, 0.98 : 2.49 : 1.66 : 1.71.

#### TYPE MATERIAL EXAMINED

Holotype male: [CHINA]: Taiwan: Kaohsiung, Shanping, 640 m, 23-31 March 1988, J. RAWLINS, C. YOUNG (CMNH).

Paratypes: 2 males: [CHINA]: Taiwan: Kaohsiung, Shanping, 640 m, 1-10 April 1988, R. DAVIDSON, J. RAWLINS, C. YOUNG (CMNH); 2 males: [CHINA]: Taiwan: Kaohsiung, Shanping, 640 m, 11-20 April 1988, J. RAWLINS, C. YOUNG, R. DAVIDSON (CMNH, JAL); 2 males 1 female: [CHINA]: Taiwan: Kaohsiung, Shanping, 640 m, 21-30 April 1988, C. YOUNG, R. DAVIDSON, J. RAWLINS (CMNH, JAL).

DISTRIBUTION. - Taiwan.

ETYMOLOGY. - The species is dedicated to Mr. John E. RAWLINS, the Curator of *Heteroptera* in the Section of Invertebrate Zoology of the Carnegie Museum of Natural History in Pittsburgh (USA), who has kindly arranged a loan of the Oriental *Cydnidae* from the Museum collection.

### ***Adrisa romani*, new species**

(figs. 219-221)

DIAGNOSIS. - The costa with the single setigerous puncture, the head densely punctured bearing 3 pair of primary hair-like setae, and the paramere as in fig. 220 will permit easy recognition of this species within the *nigra*-group.

DESCRIPTION. - Head black, coarsely punctured with exception of clypeus and posterior margin; paraclypei joined in front of clypeus, each with 3 primary hair-like setae (fig. 219); eyes reddish brown, ocular index 2.96; ocelli reddish brown, interocellar index 5.0; antennae castaneous, 4th segment apically pale brown; rostrum reddish brown, reaching middle coxae.

Pronotum blackish brown, coarsely densely punctured with exception of calli and posterior margin, punctures larger than those on head; each lateral margin with 5-6 submarginal setigerous punctures.

Scutellum blackish brown, disc densely and evenly punctured with exception of anterolateral angles and extremely apex; punctures of the same size as those on pronotum; apex almost sharp.

Corium castaneous, densely punctured, punctures smaller than those on pronotum and scutellum; clavus with three complete one short rows of punctures; mesocorium almost evenly punctured, two rows of punctures parallel clavo-corial suture; exocorium with very dense puncturation; costa impunctate, except for 1 setigerous puncture; membrane broader than abdomen, surpassing its tip, brown with numerous darker and lighter irregular patches.

Propleuron blackish brown; depression, posterior convexity and apical half of anterior convexity with numerous punctures.

Sternites dark castaneous, glossy in the middle, sides with crowded puncturation.

Legs dark castaneous, not specifically modified.

Paramere robust (fig. 220); ductus seminis long (fig. 221).

Measurements (male only): body length 13.33; body width 7.81; head length 2.49; head width 3.39; pronotum length 4.15; pronotum width 7.10; scutellum length 5.05; scutellum width 4.75; antennal segments: 0.61 : 1.68 : 1.12 : 1.39.

TYPE MATERIAL EXAMINED

Holotype male: [MALAYSIA]: Pahang, Malay Peninsula, 1 male, ex coll. R. HOLYNSKI (JAL).

DISTRIBUTION. - Malay Peninsula.

ETYMOLOGY. - This species is dedicated to Mr. Roman HOLYNSKI (Szarvas, Hungary), who presented me with the interesting small collection of *Cydnidae* from the Oriental countries.

***Adrisa sumatrana* Lis**

(figs. 222-223)

*Adrisa sumatrana* Lis, 1992a: 19.

DIAGNOSIS. - This species can be separated from all other members of the *nigra*-group by the absence of the setigerous punctures on the costa coupled with the ocular index not exceeding 2.4 (2.11-2.32).

DESCRIPTION. - Head black, dorsally coarsely punctured, sometimes slightly wrinkled; paraclypei longer than clypeus and joined in front of it; clypeus without subapical setigerous punctures, paraclypei with two primary setigerous punctures (fig. 222); eyes blackish brown, ocular index 2.11-2.32; ocelli reddish brown or yellowish brown, interocellar index 5.0-7.2; antennae blackish brown, 3rd and 4th segments entirely, and the 2nd in apical two thirds yellow, yellowish brown or orange; rostrum brown, reaching middle coxae.

Pronotum black, posterior part sometimes blackish brown; disc coarsely punctured, punctures larger than those on head; each lateral margin with 2 submarginal setigerous punctures.

Scutellum black, apex sometimes brown; disc densely coarsely punctured, base and apex almost impunctate; punctures in basal half large, in the apical smaller and more crowded.

Corium blackish brown, sometimes almost black, densely and evenly punctured; clavus with 3-4 rows of punctures, meso- and exocorium with punctures smaller than those on pronotum and scutellum; mesocorium additionally with two rows of punctures paralleling clavo-corial suture; costa impunctate, without setigerous punctures; membrane ochraceous, brown or dark brown with irregular blackish brown patches, apex of membrane either reaching or surpassing the tip of abdomen.

Propleuron black, its depression, anterior and posterior convexity with large coarse punctures; evaporatoria and the apex of peritreme similar to those of *A. nigra*.

Sternites black, glossy in the middle, sides coarsely punctured and striated.



Legs castaneous or dark brown, not specifically modified.

Paramere as in fig. 223.

Measurements (male and female respectively): body length 16.95-17.81, 17.71-18.85; body width 9.24-10.38, 9.76-10.76; head length 2.78-3.05, 3.05-3.27; head width 4.10-4.55, 4.39-4.65; pronotum length 4.86-5.71, 5.43-6.00; pronotum width 8.76-9.71, 9.43-10.10; scutellum length 6.09-6.38, 6.38-6.86; scutellum width 5.52-6.00, 5.90-6.29; antennal segments: 0.77-0.87 : 2.12-2.17 : 1.40-1.48 : 1.50-1.61, 0.88-0.96 : 2.21-2.38 : 1.44-1.55 : 1.55-1.64.

#### TYPE MATERIAL EXAMINED

Holotype male of *Adrisa sumatrana* Lis. [INDONESIA]: 144 37, Veboras - Sumatra, AMYOT, Ms. Paris, *Adrisa sumatrana* Lis, det. J.A. Lis, Holotype (MNHN).

Paratypes: 1 male: [MALAYSIA]: Sarawak, Semongok, light trap, Nov-1967, coll. G.H.L. ROTHSCILD, 7125, Pres. by Com. Inst. Ent. BM. 1974-1, *Adrisa sumatrana* Lis, det. J.A. Lis, Paratype (JAL); 1 male: [MALAYSIA]: S[emong]ok, light trap, Nov 22, 1967, Salin Susin, 7085, Pres. by Com. Inst. Ent. BM. 1974-1, *Adrisa sumatrana* Lis, det. J.A. Lis, Paratype (BMNH); 1 female: [MALAYSIA]: Sarawak, Semongok, light trap, 21-11-1967, coll. G.H. ROTHSCILD, 9576, Pres by Com. Inst. Ent. BM. 1974-, *Adrisa sumatrana* Lis, det. J.A. Lis, Paratype (BMNH); 1 female: [MALAYSIA]: N. Borneo, Sabah, Sandakan Dist., Rumidi, R, Labuk, 16-30.IX.1973, C. PRUETT, B.M. 1975-590, *Adrisa sumatrana* Lis, det. J.A. Lis, Paratype (BMNH).

#### OTHER MATERIAL EXAMINED (3 males, 4 females)

INDONESIA: Lebong Tandai, W. Sumatra, C.J. BROOKS coll., B.M. 1936-681, 1 male Sept. 1922, 1 female 2.IX.1922, det. as *Adrisa magna* UHL. (BMNH); N Sumatra, Alas Valley: Balelutu, 3.43'N.-97.38'E, 1 female 3-8.VIII.1972, J. KRIKKEN, nos 36-40, ca 320 m, Museum Leiden, jk no 36, cult. space in lowland Multistratal evergreen forest, at light (RNH).

MALAYSIA: Malaya, Kuala Lumpur, 2 females March 17.15 (9.15) 1932, at light, Ex. F.M.S. Museum, B.M. 1955-354, 1 male Oct. 24th 1931, at light, H.M. PENDELBURY, F.M.S. Museum, Ex. F.M.S. Museum, B.M. 1955-354 (BMNH); Malaya, Selangor F.M.S., Gombak Valley, 1 male Oct. 25th 1926, H.M. PENDELBURY, F.M.S. Museum, Ex. F.M.S. Museum, B.M. 1955-354 (JAL).

DISTRIBUTION. - Malay Peninsula, Sumatra, Borneo (Sarawak).

BIOLOGICAL DATA. - Almost all examined specimens have been collected from the light trap, one from a cultivated space in a lowland evergreen forest.

### *nitidicollis*-group

Species of this group are best diagnosed by the clypeus bearing two subapical setigerous punctures, the paraclypei with at least three setigerous punctures, and the costa with at least one setigerous puncture.

#### Key to species of *nitidicollis*-group

1. Each paraclypeus with 4-7 submarginal setigerous punctures; costa with more than 1 setigerous puncture (2-10); each lateral margin of pronotum with 9-24 setigerous punctures; body length not exceeding 12.5 mm (9.8-12.0 mm) . . . . . *nitidicollis* (p. 133)
- Each paraclypeus with 1 submarginal setigerous puncture; costa with 1 setigerous puncture; each lateral margin of pronotum with 5 setigerous punctures; body length exceeding 12.5 mm (12.95-14.0 mm) . . . . . *birmana* (p. 132)

***Adrisa birmana* Lis**

(figs. 224-228)

*Adrisa magna*, not of UHLER: DISTANT, 1901a: 101 [part], 1902: 89 [part].*Adrisa nigra*, not of AMYOT & SERVILLE: ŠTUSÁK, 1991: 117 & 121.*Adrisa birmana* Lis, 1992a: 23.

**DIAGNOSIS.** - The species can be easily separated from *A. nitidicollis* by the characters given in the key.

**DESCRIPTION.** - Head black or dark castaneous, dorsally coarsely punctured; paraclypei equal to or slightly longer than clypeus; the latter free, subapically with 2 setigerous punctures; each lateral margin of paraclypei with the single submarginal setigerous puncture (fig. 224); eyes brown, yellowish brown or reddish brown, ocular index 2.70-3.20; ocelli reddish brown or yellowish brown, interocellar index 4.2-5.0; antennae brown or blackish brown; rostrum brown, reaching middle coxae.

Pronotum black, blackish brown or castaneous; disc coarsely punctured, except calli and posterior margin; each lateral margin with 5 setigerous punctures (four on the anterior lobe, one on the posterior - fig. 225).

Scutellum coloured as pronotum, disc densely and coarsely punctured (fig. 225); anterolateral angles and apex impunctate or almost impunctate.

Corium somewhat paler than pronotum and scutellum (sometimes clavus and exocorium brown) densely and almost evenly punctured; exocorium with the densest puncturation; clavus with 3-4 almost parallel rows of punctures, meso- and exocorium with punctures smaller than those on pronotum and scutellum; costa with 1 setigerous puncture; membrane milky brown or whitish with irregular dark brown patches, apex of membrane either reaching or slightly surpassing the tip of abdomen.

Propleuron dark castaneous, depression with distinct large punctures; evaporatoria as in fig. 226.

Sternites blackish brown, glossy in the middle, sides densely and coarsely punctured, sometimes also striated.

Legs castaneous or dark castaneous, not specifically modified.

Distal part of penis as in fig. 228, paramere as in fig. 227, inner process varying in shape.

Measurements (male and female respectively): body length 12.50-13.62, 12.95-14.00; body width 6.50-7.95, 7.42-7.43; head length 2.24-2.44, 2.19-2.44; head width 3.49-3.61, 3.41-3.58; pronotum length 4.10-4.33, 3.81-4.09; pronotum width 7.55-7.70, 6.95-7.28; scutellum length 5.25-5.55, 4.95-5.14; scutellum width 4.61-4.95, 4.57-4.76; antennal segments: 0.73-0.74 : 1.76-1.90 : 1.12-1.27 : 1.27-1.34, 0.61-0.68 : 1.71-1.90 : 1.15-1.18 : 1.23-1.34.

**TYPE MATERIAL EXAMINED**

Holotype male of *Adrisa birmana* Lis: [BURMA]: Tenasserim, Meetan, FEA, Apr. 1887, Museo Civico di Genova, *A. magna*, det. DISTANT, *Adrisa birmana* Lis, det. J.A. Lis, Holotype (MCSN).

Paratypes: 1 larva: [BURMA]: Tenasserim, Meetan, FEA, Apr. 1887, Museo Civico di Genova, *A. magna*, det. DISTANT, *Adrisa birmana* Lis, det. J.A. Lis, Paratype (MCSN); 1 male and 1 female: [MALAYSIA]: Malaysia, Pahang, Taman Negara, 1-13.iii.1984, at light, L. JASSOP, B.M. 1984-230 *Adrisa birmana* Lis, det. J.A. Lis, Paratype (BMNH, JAL); 1 female: [THAILAND]: W. Thailand, 300m, Thung Yai Wildlife Sanctuary, 15.28°N-98.48°E, At light, Tak Province, Umphang District, Song Bae Stream, 18-27 IV 1988, Evergreen rain forest, M.J.D. BRENDILL, B.M. 1988-183, *Adrisa birmana* Lis, det. J.A. Lis, Paratype (BMNH); 1 male and 1 female: [MALAYSIA]: Perak F.M.S., Batang Padang, Kuala Woh, at light, Mar. 20th 1940 (female), Mar. 22nd 1940 (male), Ex. F.M.S. Museum, B.M. 1955-354, *Adrisa birmana* Lis, det. J.A. Lis, Paratype (BMNH).

OTHER MATERIAL EXAMINED (2 males, 2 females)

BURMA: Tavoy, 1 female, DISTANT Coll. 1911-383 (BMNH).

LAOS: Luang Prabang, Ban Thao Phan, 1 male 11.III.1918, R.V. de SALVAZA, Indo China, R.V. de SALVAZA 1918-1 (JAL); Haut Mekong, Pou Hai Katoui, 1 female 6.IV.1918, R.V. de SALVAZA, Indo China, R.V. de SALVAZA 1918-1 (BMNH).

THAILAND: Siam, Muok-Lek 1000', 1 male, Januar, H. FRUHSTORFER, H. FRUHSTORFER vend. 25.X.1903 (ZIZM).

DISTRIBUTION. - Burma, Laos, Thailand, Malaya.

BIOLOGICAL DATA. - A majority of examined specimens has been collected at light, among them one in a tropical rain forest.

REMARK. - The fifth instar larva of *A. birmana* was described and figured in my previous paper on the genus (LIS, 1992a).

### ***Adrisa nitidicollis* (STAL)**

(figs. 229-232)

*Acatalectus nitidicollis* STAL, 1854: 232, 1876: 20; DOHRN, 1859: 9; WALKER, 1867: 164.

*Adrisa nitidicollis*: SIGNORET, 1881e: 208; LETHIERRY & SEVERIN, 1893: 63; ŠTUSAK, 1991: 117; LIS, 1992a: 21.

DIAGNOSIS. - The species can be easily separated from *A. birmana* by the key characters.

DESCRIPTION. - Head black or blackish brown, dorsally distinctly punctured and wrinkled; paraclypei slightly longer than clypeus, the latter free, subapically with 2 setigerous punctures; each paraclypeus with 4-7 submarginal setigerous punctures (fig. 229); eyes blackish brown or reddish brown, ocular index 2.80-3.60; ocelli reddish brown or yellowish brown, interocellar index 2.5-4.0; antennae brown, 3rd segment apically and the 4th entirely paler; rostrum brown, surpassing middle of mesosternum.

Pronotum blackish brown or dark chocolate brown, disc coarsely punctured with exception of calli; all punctures distinctly larger than those on head; each lateral margin with 9-24 submarginal setigerous punctures.

Scutellum coloured as pronotum, disc densely and coarsely punctured with exception of anterolateral angles; all punctures slightly smaller than those on pronotum; apex acute and almost impunctate.

Corium densely and evenly punctured, castaneous or dark castaneous, sometimes partly pale brown; clavus with 3-4 rows of punctures, meso- and exocorium with punctures smaller than those on pronotum and scutellum; mesocorium additionally with two rows paralleling clavo-corial suture; costa with 2-10 setigerous punctures; membrane milky brown or whitish with irregular blackish brown patches, apex of membrane either reaching or slightly surpassing the tip of abdomen.

Propleuron dark chocolate brown, depression with large punctures, apical part of anterior convexity and basal part of the posterior with smaller punctures; evaporatoria as in fig. 230.

Sternites blackish brown or black, glossy in the middle, sides densely punctured with fine punctures.

Legs castaneous or dark brown, not specifically modified.

Distal part of penis as in fig. 232, paramere as in fig. 231.

Measurements (male and female respectively): body length 9.81-12.00,

10.00-10.76; body width 6.20-6.75, 6.55-7.30; head length 1.49-1.96, 1.80-1.93; head width 2.44-3.00, 2.66-2.80; pronotum length 3.15-3.80, 3.30-4.00; pronotum width 5.71-6.57, 6.05-6.60; scutellum length 3.70-4.38, 4.20-4.40; scutellum width 3.56-4.19, 3.95-4.30; antennal segments: 0.44-0.57 : 1.02-1.40 : 0.61-0.84 : 0.78-0.93, 0.46-0.56 : 1.10-1.33 : 0.70-0.78 : 0.79-0.85.

TYPE MATERIAL EXAMINED

Lectotype male of *Acatalectus nitidicollis* STÅL (designated by LIS, 1992a: 22): [INDONESIA]: Java, Medlerborg; Type; *nitidicollis* STÅL; Typus; Naturhistoriska Riksmuseet Stockholm, Loan No 11/91, Lectotype (SMNH).

OTHER MATERIAL EXAMINED (12 males, 4 females)

INDONESIA: Java occident., Pengalengan, 4000', 1 female 1893, H. FRUHSTORFER, Muséum Paris, Coll. NOUALHIER 1898, det. as *Adrisa nitidicollis* STÅL by WEI YANG 1935 (MNHN); Java, 1 female, (J.B. LEDRU), R. OBERTHUR 1898, Muséum Paris (MNHN); Java, Buitenzorg, 1 male, Dr. SPIRE 1901, Muséum Paris (MNHN); Java, Palabuan, 1 male, Muséum Paris, Coll. NOUALHIER 1891 (JAL); Java, Banjoewangi, 4 males 1909, Mac GILLAVRY, coll. Dr. D. Mac GILLAVRY (ZMA, JAL); Batavia, 1 male, W.V. WOLFING leg., ded. 25.IX.1897 (ZIZM); Blavan, Bondowoso, Java or., 2 males 1 female, H. LUCHT (ZIP, JAL); Ko.O. Blawan, Idjen-Plateau, 900-1500 Mr., Leg. H. LUCHT (ZIP); Lombok, Sambalun, 4000', 1 female April 1896, H. FRUHSTORFER, det. as *Adrisa nitidicollis* (HNHM); Ost Bali, Kintamani, 1 male, E. STRESEMANN (BMNH); Bali Island, Tamblang and Kintamani, 1 male, E. STRESEMANN, 1913-504 (BMNH).

PHILIPPINES: Philippin., coll. SIGNORET, 1 male, det. as *nitidicollis* by SIGNORET, Coll. Nat.-Mus. Wien (NHMW).

DISTRIBUTION. - Indonesia (Java, Lombok, Bali), Philippines.

### Genus *Aethoscytus*, new genus

DIAGNOSIS. - Among those genera with the 5-segmented antennae and the large evaporative area on the mesopleuron, members of this genus may be recognized by the set of following characters: the head bearing long hair-like setae in a submarginal row on the paraclypei (fig. 235); the anterior tibia with tarsus arising at its apex; the umbones of the pronotum not swollen; the apex of peritreme with conspicuous almost blunt tooth being a part of the anterior ridge of the peritreme; the middle and posterior tibiae slightly compressed; the penis stout and conspicuously thickened in the subapical part (figs. 234, 238, 240).

DESCRIPTION. - Head broader than long; clypeus as long as or shorter than paraclypei, tapering apicad, subapically without setigerous punctures; each paraclypeus with a row of 6-8 submarginal setigerous punctures bearing long hair-like setae; eyes not large, narrow; ocelli well developed; antennae 5-segmented.

Pronotum broader than long, narrowed anteriorly, disc undivided into lobes; umbones not swollen; each lateral margin with a row of 9-15 submarginal setigerous punctures.

Scutellum longer than broad, disc with conspicuous puncturation, basal and lateral rows of punctures well developed; apex tongue-like, its tip almost rounded.

Corium divided into clavus, meso- and exocorium; clavus and mesocorium with rows of punctures; costa with 1-5 setigerous punctures; membrane broader than abdomen, surpassing its tip.

Propleuron polished, depression with distinct punctures; evaporative areas large (fig. 236), apex of peritreme posteriorly with narrow and almost blunt tooth being a part of anterior ridge of peritreme.

Sternites glossy in the middle, sides distinctly densely punctured.

Anterior tibiae expanded, marginally with numerous spines and setae; posterior femora with spines and setae; middle and posterior tibiae slightly compressed, margins with numerous spines.

Penis robust, thickened in the subapical part (figs. 233, 237, 239); paramere compact (figs. 234, 238, 240).

TYPE OF GENUS. - *Aethus foveolus* DALLAS, 1851.

REMARKS. - The genus contains three Oriental species (among them two new to the science), and the one African - *Aethoscytus multisetosus* (NOUALHIER, 1898) n. comb. - incorrectly placed by LINNAVUORI (1993) in the genus *Geotomus* MULS. & REY.

#### Key to species of *Aethoscytus*

1. Body length exceeding 9 mm (10.1-11.3); paramere with large tooth on the dorsal surface (fig. 237) ..... *foveolus* (p. 136)
- Body length not exceeding 9 mm (5.5-8.1); tooth on the dorsal surface of paramere small or absent ..... 2.
2. Costa with 1-2 setigerous punctures; propleuron with numerous coarse punctures in depression; paramere dorsally with small tooth (fig. 233), penis as in fig. 234 ..... *baloni* (p. 135)
- Costa with 3-5 setigerous punctures; propleuron with several punctures in depression; paramere without tooth on the dorsal surface (fig. 239), penis as in fig. 240. .... *secundus* (p. 137)

#### *Aethoscytus baloni*, new species

(figs. 233-234)

*Lactistes truncato-serratus*, not of SIGNORET: DISTANT, 1901a: 101 [part].

*Lactistes rastellus*, not of SCHIÖDTE: DISTANT, 1901a: 101 [part].

DIAGNOSIS. - The new species may be recognized within the genus by the body length ranging from 6.60 to 8.10 mm, the coarsely punctured depression of propleuron, the costa bearing 1-2 setigerous punctures, and the shape of paramere as in fig. 233.

DESCRIPTION. - Body from castaneous to blackish brown, sometimes almost black (in such a case corium is more brownish than pronotum and scutellum).

Head dorsally densely punctured; clypeus shorter than and laterally covered by paraclypei; each paraclypeus with a row of 6-7 submarginal long hair-like setae; eyes blackish brown or almost black, ocular index 2.56-3.13; ocelli reddish brown, interocellar index 5.0-8.0; antennae brown or dark brown, distinctly paler than dorsum; rostrum brown or dark brown, reaching middle of mesosternum.

Pronotal disc laterally with numerous, coarse punctures, anteromedially with a narrow band of punctures, and postmedially with broad band of scarcely scattered punctures not reaching the posterior margin; calli smooth and slightly elevated; each lateral margin with a row of 8-11 submarginal setigerous punctures.

Scutellum densely punctured, with exception for the basal fourth; punctures slightly larger than those of pronotum; apex impunctate.

Corium with distinct puncturation; clavus with three rows of punctures (short, long, short); mesocorium with two complete rows of punctures paralleling

clavo-corial suture, the remaining surface with evenly spaced numerous smaller punctures; exocorium with numerous punctures, usually more distinct than those of mesocorial disc; costa with 1-2 setigerous punctures; membrane browned, semihyaline, surpassing the tip of abdomen.

Propleuron with numerous punctures in depression and in the basal part of posterior convexity; evaporatoria as in *A. foveolus*.

Sternites laterally with dense and deep puncturation, sometimes accompanied by transverse rugae. Legs brown or castaneous; not specifically modified.

Paramere dorsally with small tooth (fig. 233); penis as in fig. 234.

Measurements (male and female respectively): body length 6.59-7.35, 6.90-8.10; body width 4.05-4.42, 3.80-4.50; head length 0.85-1.12, 1.02-1.11; head width 1.56-1.78, 1.52-1.72; pronotum length 2.09-2.32, 2.05-2.49; pronotum width 3.50-4.15, 3.51-4.22; scutellum length 2.59-3.01, 2.65-3.24; scutellum width 2.20-2.56, 2.25-2.61; antennal segments 0.29-0.39 : 0.46-0.50 : 0.39-0.46 : 0.54-0.62 : 0.55-0.60, 0.30-0.35 : 0.47-0.55 : 0.42-0.47 : 0.55-0.60 : 0.57-0.60.

#### TYPE MATERIAL EXAMINED

Holotype male: [BURMA]: Palon (Pegú), L. FEA VIII.IX.87, det. as *Aethoscytus foveolus* (DALL.), det. J.A. LIS (JAL).

Paratypes: 1 male: [INDIA]: Prome, 5/87 (JAL); 1 female: [INDIA]: Berhampur, det. as *Aethoscytus foveolus* (Dall.), det. J.A. LIS (BMNH); 1 male: [INDIA]: Inde-Konbir, 1891 (JAL); 1 male: [INDIA]: Indes Or., *Macroscytus annulicornis* FIEBER, type, det. as *Aethoscytus foveolus* (DALL.), det. J.A. LIS (MNHN); 1 female: [INDIA]: Panvel bei Bombay, 21.X.1955, D. Indien Exp. Nr.534, Eing. Nr.1 1956 (ZIZM); 1 female: [BURMA]: Palon (Pegú), L. FEA VIII.IX.87 (JAL); 1 female: [BURMA]: Palon (Pegú), L. FEA VIII.IX.87, Birma, Leonardo FEA leg., vend. 1.I.1895 (ZIZM); 1 male: [BURMA]: Carin, Asciuii Ghecu 1400-1500m, L. FEA, III-IV 88, Museo Civico di Genova, det. as *Lactistes rastellus* SCHI. by DISTANT, det. as *Aethoscytus foveolus* (DALL.) by J.A. LIS (MCSN); 1 female: [BURMA]: Carin, Asciuii Ghecu 1400-1500m, L. FEA, III-IV 88, Birma, Leonardo FEA leg., vend. 1.I.1895 (ZIZM); 1 male: [BURMA]: Rangoon, Birmania, FEA XII 1888, Museo Civico di Genova, det. as *Lactistes truncato-serratus* by DISTANT, det. as *Aethoscytus foveolus* (DALL.) by J.A. LIS (MCSN); 2 females: [BURMA]: Rangoon, Birmania, FEA XII 1888, DISTANT Coll., 1911-383, det. as *Aethoscytus foveolus* (DALL.), det. J.A. LIS (BMNH, JAL); 1 male 3 females: [BURMA]: Rangoon, SCHMEEHAGEN leg., G. BREDDIN det., det. as *Cydnus indicus* Ww. (ZIZM).

DISTRIBUTION. - India, Burma.

ETYMOLOGY. - The species is dedicated to my friend, Mr. Adam BALON.

REMARKS. - Most of the examined specimens has previously been determined by me as *A. foveolus*; when the type of the latter was studied it turned out they represented a new species. One examined specimen was labelled by FIEBER as the type of *Macroscytus annulicornis*; to my knowledge such a species has never been described.

### *Aethoscytus foveolus* (DALLAS), new combination

(figs. 235-238)

*Aethus foveolus* DALLAS, 1851: 113; DOHRN, 1859: 9; WALKER, 1867: 157 [part].

*Macroscytus foveolus*: ATKINSON, 1887: 53 [part]; DISTANT, 1902: 97 [part]; LETHIERRY & SEVERIN, 1893: 71 [part].

Misidentifications: SIGNORET, 1883a: 472; BERGROTH, 1915: 170; HORVÁTH, 1919: 240; HASEGAWA, 1962: 7; JOSIFOV & KERZHNER, 1978: 188, 189, figs. 73-75.

DIAGNOSIS. - The species can be separated from its congeners by the large body (exceeding 10.0 mm in length), and the shape of the paramere as shown in the key.



DESCRIPTION. - Head brown or blackish brown; dorsally wrinkled, sometimes also punctured; clypeus almost as long as paraclypei, distinctly tapering apicad; each paraclypeus with a row of 7-8 submarginal setigerous punctures bearing long hair-like setae (fig. 235); eyes blackish brown or brown, ocular index 2.31-2.51; ocelli reddish brown, large, interocellar index 5.0-8.0; antennae brown; rostrum reddish brown, reaching posterior margin of middle coxae.

Pronotum chocolate brown or blackish brown, disc with distinct puncturation, calli and posterior part impunctate; each lateral margin with a row of 13-15 submarginal setigerous punctures.

Scutellum of the same colour as pronotum; disc distinctly punctured, punctures of the same size as those on pronotum; the basal fourth, as well as apex impunctate.

Corium brown, somewhat than pronotum and scutellum, distinctly punctured, punctures somewhat smaller than those on scutellum and pronotum; clavus with one complete and two partial rows of punctures; mesocorium with two rows of punctures paralleling clavo-corial suture, the distal half of mesocorial disc with numerous punctures, the basal sparsely punctured; exocorium entirely with very dense puncturation; costa with 4-5 setigerous punctures; membrane hyaline, slightly browned, broader than abdomen and extending beyond its apex.

Propleuron with numerous distinct punctures in depression; evaporatoria and apex of peritreme as in fig. 236.

Sternites blackish brown, glossy in the middle, lateral parts large punctures.

Legs chocolate brown or blackish brown, not specifically modified.

Penis as in fig. 238; paramere with large tooth on the dorsal surface (fig. 237).

Measurements (male only): body length 10.10-11.24; body width 6.10-6.60; head length 1.37-1.63; head width 2.37-2.51; pronotum length 3.31-3.35; pronotum width 5.80-6.05; scutellum length 3.75-4.30; scutellum width 3.75-3.80; antennal segments: 0.56 : 0.85 : 0.70, 4th and 5th missing.

#### TYPE MATERIAL EXAMINED

Lectotype male of *Aethus foveolus* DALLAS (present designation): [INDIA]: N. India, 48 134; Type; HARDWICKE Bequest; 61. *Aethus foveolus* DALLAS; Brit. Mus. Type No. Hem. 325; Lectotype det. J.A. Lis (BMNH).

#### OTHER MATERIAL EXAMINED (1 male)

INDIA: Panvel bei Bombay, 1 male 6.X.1955, D. Indien Exp., Nr. 62, Eing. Nr. 1 1956 (ZIZM).

DISTRIBUTION. - India.

REMARKS. - The specific name "*foveolus* DALL." was incorrectly connected with the genus *Macroscytus* by SIGNORET (1883a); that error was repeated by all subsequent authors. Most of the specimens published hitherto under the name of *Macroscytus foveolus* pertained actually to *M. aequalis*.

### ***Aethoscytus secundus*, new species**

(figs. 239-240)

DIAGNOSIS. - The species differs from *A. foveolus* in the body length (*A. secundus* - 5.5-6.8 mm, *A. foveolus* - 10.3-11.3 mm). It differs from *A. baloni* in the number of setigerous punctures on the costa (3-5 in *A. secundus*, 1-2 in *A. baloni*), in the presence of a few punctures in the propleural depression (numerous punctures in *A. baloni*), and in its shape of the penis and the parameres.

DESCRIPTION. - Body from dark castaneous to blackish brown, corium usually more brownish than pronotum and scutellum.

Head from weakly to distinctly punctured, punctures small; clypeus shorter than and laterally covered (sometimes totally) by paraclypei; each paraclypeus with a row of 6-8 submarginal hair-like setae; eyes reddish brown or blackish brown, ocular index 2.32-2.90; ocelli reddish brown, interocellar index 6.0-9.0; antennae brown or dark brown; rostrum brown or dark brown, reaching middle of mesosternum.

Pronotum with a puncturation as in *A. baloni*, but punctures smaller than those of the former species; each lateral margin with a row of 10-14 submarginal setigerous punctures.

Scutellum densely punctured except for basal quarter and apex, punctures larger than those of pronotum.

Corium with puncturation as in *A. baloni*; costa with 3-5 setigerous punctures; membrane semihyaline, browned, broader than abdomen and surpassing its tip.

Propleuron with several punctures in depression, posterior convexity basally almost impunctate; evaporatoria as in *A. foveolus*.

Sternites laterally with crowded puncturation and transverse wrinkles, as well.

Legs not specifically modified.

Penis as in fig. 240; paramere without tooth on the dorsal surface (fig. 239).

Measurements (male and female respectively): body length 5.50-7.11, 6.20-7.15; body width 3.05-3.85, 3.32-3.71; head length 0.78-0.85, 0.84-0.95; head width 1.26-1.61, 1.43-1.59; pronotum length 1.78-2.27, 1.80-2.19; pronotum width 2.84-3.71, 3.15-3.61; scutellum length 2.21-2.76, 2.39-2.68; scutellum width 1.89-2.39, 2.02-2.41; antennal segments: 0.24-0.32 : 0.34-0.46 : 0.30-0.42 : 0.39-0.56 : 0.42-0.46, 0.25-0.27 : 0.35-0.45 : 0.31-0.39 : 0.41-0.48 : 0.44-0.47.

#### TYPE MATERIAL EXAMINED

Holotype male: [INDIA]: India, Madhya Pradesh, Jabalpur, leg. Gy. TOPAL, No. 258, singled material, 24.III.1967 (HNHM).

Paratypes: 1 male: [INDIA]: Ujjain, India, summer 1967, J.P. PATHEK (JAL); 14 males 15 females: [INDIA]: C. India, Jabalpur, 1600ft., IX-1959, P. SUSAI NATHAN (RNH, JAL); 3 males: [INDIA]: C. India, Jabalpur, 1600ft., III-1958, P. SUSAI NATHAN (RNH); 8 males 13 females: [INDIA]: Museum Leiden, S. India, Coimbatore, Madras State, 1400ft, XI.1960, P. SUSAI NATHAN (RNH, JAL); 1 male 1 female: [INDIA]: India, Madhya Pradesh, Jabalpur, leg. Gy. TOPAL, No. 258, singled material, 24.III.1967 (HNHM); 1 male 1 female: [INDIA]: India, Jabalpur, Madhya Pradesh, leg. Gy. TOPAL, No. 215, singled, 9.III.1967 (HNHM, JAL); 2 males: [INDIA]: India, Jabalpur, Madhya Pradesh, leg. Gy. TOPAL, No. 293, singled material, 1.IV.1967 (HNHM, JAL); 1 male: [INDIA]: Hügel Kaschmir, *philippinensis* det. SIGNOR. (NhMW); 1 male 5 females: [INDIA]: Lucknow, Mus. Collr. R.H., DISTANT Coll., B.M. 1911-383, 17.I.08 [1 male], 3.II.08 [2 females] 9.II.08 [1 female], 2.II.08 [1 female], 5.II.08 [1 female] (BMNH, JAL); 1 male: [INDIA]: Najpur (JAL); 1 male: [INDIA]: Bandra, India, Dr. JAYAKAR, 1905-152 (BMNH); 2 males: [INDIA]: India, Poona, B.M. 1946-365, 26.II.1945 [1 male], 4.I.1945 [1 male] (BMNH, JAL); 1 female: [INDIA]: Nandidrug, S. India, T.V.C., P8, Ex. Coll. E.A. BUTLER, B.M. 1926-171 (BMNH); 1 female: [INDIA]: For. Zool. Coll., Kanorao, Dehra Dun, 30.I.1913, A.D. IMMS, 90, From Ind. Mus., DISTANT Coll., B.M. 1911-383 (BMNH); 1 male: [INDIA]: Panvel bei Bombay, 6.11.55, D. Indien Exp., Nr. 564, Eing. Nr. 1 1956 (ZIZM); 1 male 1 female: [INDIA]: S. India, Mysore, Chikballapur, South India, T.V. CAMPBELL Coll., B.M. 1930-599, *Macroscytus badius* WALKER (BMNH).

DISTRIBUTION. - India.

#### Genus *Aethus* DALLAS

*Aethus* DALLAS, 1851: 112.

*Cydnus* [part] of authors, nec FABRICIUS 1803.

DIAGNOSIS. - The genus is best diagnosed by the set of following characters: the antennae 5-segmented; submargins of the head with both peg-like and hair-like

setae; the costal margins straight; the apex of the peritreme kidney-like, posteriorly with usually blunt, not claw-like tooth; the posterior tibiae slender and only sometimes slightly broadened; the umbones of the pronotum slightly swollen, not totally concealing the posterolateral pronotal margins.

DESCRIPTION. - Head more or less semicircular, broader than long; clypeus as long as or shorter than paraclypei, sometimes almost totally covered by them; subapical part of clypeus without or with a pair of either peg-like or hair-like setae; each paraclypeus with a submarginal row of setigerous punctures bearing both peg-like and hair-like setae; eyes narrowed, each with a conspicuous apical spine; ocelli present; antennae 5-segmented.

Pronotum broader than long, undivided into lobes; disc, with exception of calli, distinctly punctured; anterior margin moderately to strongly angularly emarginated; umbones slightly swollen, sometimes partially covering posterolateral margins; each lateral margin with a submarginal row of setigerous punctures bearing long hair-like setae.

Scutellum longer than broad; disc punctured, except for anterolateral angles; basal and lateral rows of punctures developed, but sometimes almost indistinct; apex rounded.

Corium divided into clavus, meso- and exocorium, punctured, mesocorium additionally with two rows of punctures paralleling clavo-corial suture; costa with setigerous punctures; membranous suture straight.

Propleuron with anterior and posterior convexities distinctly developed; depression more or less punctured; evaporatoria on meso- and metapleuron large; apex of peritreme kidney-like, posteriorly with usually blunt, not claw-like tooth (figs. 253, 258, 263, 266).

Sternites glossy in the middle, sides punctured, sometimes also wrinkled.

Anterior tibiae distinctly compressed and expanded, outer margin with stout spines; middle and posterior tibiae usually slender, only sometimes slightly broadened, spined on margins; ventral margin of femora with long setae.

Genitalia of the geotomine type.

TYPE OF GENUS. - *Cydnus indicus* WESTWOOD, 1837, subsequent designation by VAN DUZEE, 1914.

REMARKS. - The genus has never been precisely defined, and therefore it contained numerous species which actually should have not pertained to it (see also LIS, 1993b). Recently also LINNAVUORI (1993) in his revision of African *Cydnidae* treated this genus in the old, very broad sense, and placed numerous non-*Aethus* species within it. Additionally, he divided the genus into two subgenera (namely *Aethus* s.str. and *Putonisca* HORV.) on the basis of the shape of the peritremal apex; actually, as it was shown in one of my recent papers (LIS, 1993b), *Putonisca* HORV. is a junior synonym of *Microporus* UHLER. All species placed by LINNAVUORI (1993) within *Putonisca* pertained in fact to either *Microporus* or *Byrsinus*. At present the genus contains ten Oriental species, among them one new to the science.

#### Key to species of *Aethus*

1. Subapical part of clypeus with two long hair-like setae (figs. 256, 261); smaller species, body length from 3.8 to 5.7 mm ..... 2.

- Subapical part of clypeus either without setigerous punctures or with two peg-like setae (figs. 242, 252); larger species, body length from 5.6 to 8.0 mm ..... 5.
- 2. Bicoloured species (fig. 265); head, pronotum and scutellum brown, dark brown or blackish brown, corium yellow or yellowish brown; paramere as in fig. 267 ..... *tanna* (p. 153)
- Uniformly dark brown, blackish brown or black species, corium neither yellow nor yellowish brown (fig. 241); paramere not as above ..... 3.
- 3. Larger species, body length exceeding 5.0 mm (5.30-5.70); each paraclypeus with a row of 14-18 setigerous punctures; each lateral margin of pronotum with 40-48 setigerous punctures; paramere and penis as in figs. 259 & 260, respectively ..... *mumba* (p. 147)
- Smaller species, body length not exceeding 5.0 mm (3.20-4.10); each paraclypeus with a row of 9-14 submarginal setigerous punctures; each lateral margin of pronotum with 15-40 setigerous punctures; paramere and penis not as above ..... 4.
- 4. Lateral body margins with several setigerous punctures (costa - less than 10, pronotum - less than 20, paraclypeus - less than 10); puncturation of posterior half of pronotum moderately dense; paramere with apical bunch of long hairs (fig. 255) ..... *karlaicus* (p. 146)
- Lateral body margins with numerous setigerous punctures (costa - 14-20, pronotum - 24-40, paraclypeus - 11-14); puncturation of posterior half of pronotum very dense (fig. 262); paramere without apical bunch of long hairs (fig. 264) ..... *nepalensis* (p. 148)
- 5. Clypeus subapically with two peg-like setae; costa with 1-3 setigerous punctures ..... *yunnanus* (p. 154)
- Clypeus subapically without peg-like setae; costa with 6-58 setigerous punctures ..... 6.
- 6. Costa with 42-58 setigerous punctures; each lateral margin of pronotum with 34-42 submarginal setigerous punctures; paramere as in fig. 254 ..... *islamabadensis* (p. 145)
- Costa with 6-12 setigerous punctures; each lateral margin of pronotum with 10-20 submarginal setigerous punctures; paramere not as above ..... 7.
- 7. Each paraclypeus with a row of 14-15 submarginal setigerous punctures; paramere as in fig. 244 ..... *borrei* (p. 140)
- Each paraclypeus with a row of 7-10 submarginal setigerous punctures; paramere not as above ..... 8.
- 8. Paramere stout (fig. 249), outer lobe broadly rounded, upper edge of blade short and steep; opening of male genital capsule dorsally almost round (fig. 248) ..... *pseudindicus* (p. 151)
- Not as above ..... 9.
- 9. Paramere as in fig. 251, upper edge of blade long and moderately steep; opening of male genital capsule distinctly convex dorso-laterally (fig. 250) ..... *philippinensis* (p. 149)
- Paramere as in fig. 247, upper edge of blade short and only sometimes slightly steep; opening of male genital capsule dorsally with distinct median incision (fig. 246) ..... *indicus* (p. 141)

### ***Aethus borrei* SIGNORET**

(figs. 242-245)

*Aethus Borrei* SIGNORET, 1882a: 32.

*Cydus Borrei*: LETHIERRY & SEVERIN, 1893: 65.

*Cydus borrei*: DISTANT, 1902: 92.

*Aethus borrei*: ATKINSON, 1887: 47; AHMAD et al., 1979: 14, 17; MOIZUDDIN & AHMAD, 1990: 313.

**DIAGNOSIS.** - Among the species of the genus with the large uniformly coloured

body and the clypeus without subapical setigerous punctures, *A. borrei* can be delimited by the presence of 9 setigerous punctures on the costa, 17-20 setigerous punctures on each lateral margin of the pronotum and 14-15 setigerous punctures on the submargin of each paraclypeus.

**DESCRIPTION.** - Head chocolate brown, anterior parts of paraclypei somewhat paler; clypeus distinctly tapering apicad, without submarginal setigerous punctures; paraclypei longer than clypeus, almost joined in front of it, each paraclypeus with a row of 14-15 submarginal peg-like setae (fig. 242); anterolateral parts of paraclypei wrinkled, a few punctures present anteriorly to ocelli; eyes grayish brown, ocular index 3.58; ocelli reddish brown, interocellar index 5.0; antennae brown; rostrum brown, reaching anterior margin of middle coxae.

Pronotum chocolate brown; disc with large blackish brown punctures, calli impunctate; each lateral margin with a row of 17-20 submarginal setigerous punctures.

Scutellum of the same colour as pronotum, distinctly punctured with punctures of the same size as those on pronotum, basal part and apex impunctate; lateral parts slightly wrinkled; apex broadly rounded.

Corium of the same colour as pronotum; punctures colourless, a little smaller than those on scutellum; clavus with one complete and one partial row of punctures; mesocorium with two rows of punctures paralleling clavo-corial suture, the remaining surface of mesocorial disc almost evenly punctured; exocorium evenly punctured; each costal margin with 9 deep setigerous punctures; membrane hyaline, slightly browned, distinctly broader than abdomen and surpassing its tip.

Propleuron chocolate brown, depression with a few punctures; evaporatoria and apex of peritreme as in fig. 243.

Sternites chocolate brown, glossy and smooth with tiny punctures along the segmental sutures, and a few behind spiracles; III and IV sternites medially with a few setae.

Anterior tibia distinctly expanded, tarsus inserted apically, but in a small depression (fig. 245).

Paramere as in fig. 244.

Measurements (male only): body length 7.35; body width 4.20; head length 1.31; head width 1.89; pronotum length 2.32; pronotum width 3.80; scutellum length 2.54; scutellum width 2.46; antennal segments: 0.46 : 0.22 : 0.36 : 0.38 : 0.43.

**MATERIAL EXAMINED (1 male)**

INDIA: N. Indien, 1 male, coll. SIGNORET, det. as *Cydnus Borrei* by SIGNORET, Coll. Nat. Mus. Wien (NhMW).

**DISTRIBUTION.** - Described from Silhet, nowadays on the territory of Bangladesh. The present record from North India is based on the old specimen and may relate to either India or Bangladesh, or even to Pakistan.

***Aethus indicus* (WESTWOOD)**

(figs. 241, 246-247)

*Cydnus Indicus* WESTWOOD, 1837: 19; LETHIERRY, 1891: CLXII; LETHIERRY & SEVERIN, 1893: 66 [part].

*Cydnus indicus*: STÅL, 1876: 26; SIGNORET, 1881a: 632 [part]; Distant, 1899a: 221; 1902: 90, 1903: 230; BREDDIN, 1904: 407, 1909: 263; MAXWELL-LEFROY, 1909: 305; MAXWELL-LEFROY & HOWLETT, 1909: 674; CHANDRA, 1953: 87; MILLER, 1971: 52.

*Aethus indicus*: DALLAS, 1851: 114; DOHRN, 1859: 9; WALKER, 1867: 155 [part]; SIGNORET, 1882a: 28 [part];



ATKINSON, 1887: 47 [part]; BERGROTH, 1915: 170; HASEGAWA, 1962: 6; KUMAR, 1962: 45, 49, 53, 54, 56; PAWAR, 1973: 212; SCHAEFER, 1981: 232; MOIZUDDIN & AHMAD, 1990: 313; LIS, 1991b: 175 [part], 1991e: 306, 1993d: 104.

*Cydnius ceylonicus*: MAYR, 1866: 362 [paralectotype from Ceylon], 1868: 9 [part]; STÅL, 1876: 27 [part]; DISTANT, 1902: 91 [part].

*Cydnius Ceylonicus*: LETHIERRY & SEVERIN, 1893: 65 [part].

*Aethus? ceylonicus*: SIGNORET, 1882a: 30 [part].

*Aethus ceylonicus*: WALKER, 1867: 158 [part]; KIRBY, 1891: 80 [part].

*Aethus badius*, not of WALKER: WALKER, 1867: 159 [paralectotypes from E. India and Ceylon].

*Lactistes rastellus*, not of SCHIØDTE: DISTANT, 1901a: 101 [part].

Misidentifications: STÅL, 1864: 23 [part], 1870: 614, 1876: 18 [part]; VOLLENHOVEN, 1868b: 17; STÅL, 1876: 27; SIGNORET, 1881a: 632 [part], 1882a: 28 [part]; BREDDIN, 1900: 289, 1906: 10; DISTANT, 1901a: 101; SCHOUTEDEN, 1933: 44; HOFFMANN, 1931: 139; WU, 1933: 208, 1935: 268; CHINA, 1935: 295; KOBAYASHI, 1974: 123; TAKAI et al., 1975: 61; IKEMOTO et al., 1976a: 231, 1976b: 239; HSIAO et al., 1977: 44; SCHAEFER, 1988: 24; LIS, 1991b: 175 [part], 1993d: 104; LIN & ZHANG, 1992: 218; LINNAVUORI, 1993: fig. 52.

**DIAGNOSIS.** - *A. indicus*, *A. pseudindicus* and *A. philippinensis* form the group of sibling species, which can be delimited from other members of the genus by the large uniformly coloured body, the clypeus without subapical peg-like setae, the costa with 6-12 setigerous punctures, and each paraclypeus with a row of 7-10 submarginal setigerous punctures. Males of the three species are recognizable by the differences in the genitalia, especially in the shape of the paramere and the external opening of the genital capsule.

Unfortunately, females are recognizable only by their areas of distribution, because other characters are not reliable for distinguishing.

**DESCRIPTION.** - Body uniformly coloured, from pale brown to black (fig. 241).

Head with clypeus tapering apicad, partially or totally covered by paraclypei, its subapical part without setigerous punctures; each paraclypeus coarsely punctured, except posterior third, and with a row of 7-10 submarginal setigerous punctures (3-5 peg-like setae and 2-5 hair-like setae); eyes dark brown or blackish brown, ocular index 2.50-3.10; ocelli pale brown or reddish brown, interocellar index 4.0-7.0; antennae and rostrum slightly paler than body surface; rostrum reaching middle of mesosternum.

Pronotal disc coarsely punctured, punctures larger than those of head; calli, umbones and posterior margin impunctate; umbones slightly swollen; each lateral margin with a row of 9-18 submarginal setigerous punctures.

Scutellum evenly punctured, punctures of the same size as those on pronotum; anterolateral angles, basal fifth and apex impunctate.

Corium with puncturation pattern typical of the genus; clavus with two rows (among them one partial) of punctures, sometimes the third very short row is present; mesocorium with two rows paralleling clavo-corial suture, mesocorial disc evenly punctured, basally with large punctures, apically with smaller; exocorium with very crowded puncturation; costa with 6-12 setigerous punctures; membrane brown or dark brown, distinctly surpassing the tip of abdomen.

Propleuron polished, with distinct punctures in depression.

Sternites glossy in the middle, laterally coarsely punctured, sometimes also transversely wrinkled.

Legs not specifically modified.

Paramere (fig. 247) more slender than in both *A. philippinensis* and *A. pseudindicus*, its outer lobe narrow, not broadly rounded, the upper edge of blade short and sometimes slightly steep; opening of male genital capsule (fig. 246) dorsally with distinct median incision.

Measurements (male and female respectively): body length 5.65-8.00,



5.60-7.86; body width 3.09-4.42, 3.19-4.46; head length 0.95-1.33, 0.68-1.18; head width 1.31-1.84, 1.34-1.88; pronotum length 1.73-2.42, 1.68-2.35; pronotum width 2.97-4.18, 3.07-4.31; scutellum length 2.27-3.07, 2.22-3.10; scutellum width 2.02-2.88, 2.02-2.82; antennal segments 0.21-0.28 : 0.28-0.36 : 0.32-0.40 : 0.36-0.49 : 0.38-0.52, 0.20-0.30 : 0.26-0.37 : 0.31-0.41 : 0.38-0.46 : 0.42-0.54.

#### TYPE MATERIAL EXAMINED

Lectotype female of *Cydnius indicus* WESTWOOD (designated by LIS, 1991b: 175): [INDIA]: Gogo; *Cydnius indicus* WESTW.; Type; Type, WESTW. (HOPE), C. Hemipt. 1837, Part I, page 19, DISTANT P.Z.S. 1900, p. 807-825; Type Hem. No. 64, *Cydnius indicus* WESTWOOD, HOPE Dept. Oxford, Lectotype, det. J.A. LIS (HEC).

Paralectotype male of *Cydnius ceylonicus* MAYR (with neither head nor pronotum): [SRI LANKA]: Novara Exp., Ceylon, *ceylonicus*, Paralectotype, det. J.A. LIS (NHMV).

Paralectotype female of *Aethus badius* WALKER: [INDIA]: Paratype; E.Ind.; *Aethus badius* WALKER's catal. (BMNH).

#### OTHER MATERIAL EXAMINED (323 males, 401 females)

PAKISTAN: Allahabad, 2 females August 1911, A.D. IMMS (BMNH); West-Pakistan, Rawalpindi, 3 males 2 females 13.-16.10.1971, LF, lg. HEISS (EHC, JAL).

NEPAL: Amlekhgani. Therai, Nepal, 2 males 7.-10.10.72, lg. H. FRANZ, Collection E. HEISS Innsbruck (EHC, JAL); Haura, Therai, Nepal, 1 female 9.10.72, lg. H. FRANZ, Collection E. HEISS Innsbruck (EHC).

INDIA: Bandra, India, 2 females 2 males, Dr. JAYAKAR, 1905-152 (BMNH, JAL); Berhampur, 6 females 2 males, ATKINSON collection, Bought 1895 (HEC, JAL), 2 females 1 male (BMNH); Calcutta, 2 females 3 males (BMNH); Indien or., DALD, Nr. 592, 2 females 1 male, Zool. Mus. Berlin, det. as *Aethus varians* FAB. (MNHU); S. India, St. Thomas Mount, 1 female XII 1950, P.S. NATHAN (CWS); Coimbatore, Madras St., 6 females 3 males XI 1950, 9 males 18 females X.1972, 5 males 5 females IX.1971, 9 males X.1971, 13 males 8 females IX.1972, 9 males 11 females X.1977, 10 females 8 males XI 1972, 33 males 46 females X-XII-1966, 1400', P.S. NATHAN (ZMA, CWS, JAL), Coimbatore, 1 male, at light trap, Y.R. Coll., Pres. by Imp. Bur. Ent., Brit. Mus., 1921-424 (BMNH); S. India, Coimbatore, 1,400 ft alt., Madras St., 1 male VII. 1971, T.R.S. NATHAN (NSMT); Coimbatore, 3 males 1 female V-VI 1982, D. LIVINGSTONE (CWS, JAL); Inde, Deccan, 8 females 3 males, Kurduvadi (IRSNB, JAL); Inde, Konbir, 1 male 1891 (IRSNB); Inde, Barway, 1 female 1 male, R.P. CARDON (IRSNB); Inde, Asanol, 1 male (IRSNB); Indes anglaises, Ajmer-Rajpudana, 10 females 11 males, ex. coll. MULLER (IRSNB, JAL); Inde, Pondichery, 1 female 3 males 12 IX 1901, M. MAINDRON (IRSNB), 1 male, det. as *Geotomus*, collection E. de BERGEVIN (MNHN); Inde, Bihar, Raxaul, 5 males 24 X 1965, Y. DOMALAIN (IRSNB, JAL), Bihar, at lamp, PUSA, 2 females 2 males 17 IX 14, PUSA coll., From Ind. Mus., DISTANT Coll., B.M. 1911-383 (BMNH, JAL); S. India, Singara, Nilgiri Hills, 3400ft, 13 females 14 males V 1954, Rec. P.S. NATHAN (IRSNB, JAL); S. India, Malabar, Walayar Forest, 100ft, 2 females 1 male X 1956, Rec. P.S. NATHAN (IRSNB); Maissour, Silvapoor (Mt. Tabourel), 1 female, R. OBERTHUR 1899, Muséum Paris (MNHN); Inde, Balasore, 1 male, R. OBERTHUR 1899, Muséum Paris (MNHN); Indes Anglaises, Surada (Ganjam district), 2 females, G. BABAULT, Muséum Paris (MNHN); Delhi, 1 female 21-27 VIII 957, SHVER (ZIL); India, 75km W. Bengalur, 1 female 1 male 25 XII 969, K. GORSEV (ZIL, JAL); Berrar, Ind. Or., 2 males, STAUDINGER and BANG-HAAS (ZIL); S. India, Karnataka, 1 female 2-10.XI.1977, Mudigere area, c. 900m, Zool. Mus. Copenhagen Exp. (ZMC); Côte de Malabar, Mahe, 4 females 3 males, M. MAINDRON 1902, Muséum Paris, det. as *Cydnius indicus* by We-I YANG 1935 (MNHN); Inde, Bellary, 4 females 4 males, de MORGAN 1896, Muséum Paris (MNHN); Inde Merid., Trichinopoli, 11 females 6 males, coll. NOUALHIER 1898, Muséum Paris (MNHN); Inde, Balasore, 1 male, R. OBERTHUR 1898, Muséum Paris (MNHN); Coromandel, Genji, 1 male, M. MAINDRON, Muséum Paris (MNHN); Coromandel, M. MAINDRON, 1 male, Pondichery, 12 sept.-14. oct. 1901, det. as *Aethus indicus* (HNHM); New Delhi, 1 male 25 VIII 58 (JAL); Inde Mer., Madura, 1 male, Dubrenil, det. as *Aethus indicus* (HNHM); New Delhi, Lichfang, 6 males 4 females, lg. E. HEISS (EHC, JAL); Himalaya, C. Rost., Pathankot, Punjab, 3 males, det. as *Aethus indicus* (HNHM); N. Delhi, 10 males 8 females 14-16 X 957, ALEKSANDROV (ZIP); Maharashtra, Poona, 1 male, leg. Gy. TOPAL, No. 584, collected on lamp, 4 VIII 1967 (HNHM); W. Bengal, Shantiniketan, 1 male, leg. Gy. TOPAL, No. 751, collected on lamps, 9 IX 1967 (HNHM); Ost Indien, 2 females, det. as *philippinensis* (NHMV); E. Bengal, 5 females 2 males, at light on board Steamer Damukdia, 30.VI.08, DISTANT Coll., B.M. 1911-383 (BMNH, JAL); Delhi, 13.X.1960 2 females 1 male, W.V. Harris, at light, B.M. 1960-618 (BMNH, JAL); India, 1 female 2 males 13 I 1911, underground near cucurbitaceous plant, PUSA A.H., PUSA coll., From Ind. Mus., DISTANT Coll., B.M. 1911-383 (BMNH, JAL); Nadungayam, 200', 1 female, Malabar, S. India, 16-22-IX-38, det. as *Cydnius indicus* WESTW. by LANSBURY 1949 (BMNH); Dehra Dun, 3 females 1 male (BMNH); Chipurupalle, Vizagapatam Distr., India, 3 females, R.S. PATUCK, B.M. 1924-430 (BMNH, JAL); Fyzabad, Unit. Prov., India, 2 females 1 male, R.W. HINGSTON, B.M. 1923-293 (BMNH, JAL); Madhupur, Bengal, 3 females 1 male 13-X-09, at light, C. PAIVA, Ind. Mus., DISTANT coll., B.M. 1911-383 (BMNH, JAL); Kerumaadi, S. end of Vembanaad Lake, Travancore, 1 male 6-XI-08, Annandale, DISTANT coll., B.M. 1911-383 (BMNH); Ernakulum, Cochrn State, Malabar, 1 male 4-XI-08, Annandale, Ind. Mus., DISTANT Coll., 1911-383 (BMNH); Bhim Tal, 4500ft, 1 female 25-IX-07, Kumaon, From Ind. Mus., DISTANT Coll., B.M. 1911-383 (BMNH); Panvel bei Bombay, 8 males 9 females 6.II.55, 1 male 11.X.1955, 2 females

20.X.1955, 4 females 21.X.1955, 2 males 19.X.1955, D. Indien Exp., Eing. Nr. 1 1956 (ZIZM); Timli, Siwalik, 11 males 18 females 25.7.1956, D. Indien Exp., Nr. 1301, Eing. Nr. 1 1956 (ZIZM); Indien, Bengal, Lohardaga-Ranchi, 1 female, J. KONIETZKO leg., Eing. Nr. 32 1932 (ZIZM); Bombay, 2 females, Leith., DISTANT Coll. 1911-383 (BMNH); India, W. Almora, Kumaon, 1 female, H.G.C., CHAMPION Coll., B.M. 1927-409 (BMNH); India, Kalimpong, 3 males 3 females V.1961, S. KOROVIN (ZIP, JAL); India, Barababri, 3 males 1 female 9-11.V.961, S. KOROVIN (ZIP); C. India, Jabalpur, 1600 ft., 1 male 1 female IX.1959, P. SUSAI NATHAN (RNH); Kerala State, Quilon, Distr. Thenmala, India, 9 males 9 females V.1988 (CWS, JAL); Central India, Uttar Pradesh State, Jhansi Dist., Babina 950 ft, Coll. T.R.S.N, 8 males 8 females VIII.87 (CWS, JAL).

SRI LANKA: Ceylon, 1 female 1869, JANSON, coll. Camille van VOLXEM (IRSNB); S. Ceylon, Habaraduwa, 6 females 7 males 20.1.-4.2. 1983, T. OSTEN leg. (SMNS, JAL); SW Sri Lanka, Habantota, 1 female 3.5.1984, DOSER leg (SMNS); Yala, Ceylon, 2 females 2 males 9.II.09, T.B.F. (BMNH, JAL); Ceylon, S.P. Kirindi, T.B.F., 1 male 25.XI.09 (BMNH); Puwakpitiya, Ceylon, 1 male 1 female, Hiver 1906-7, E. BUGNION, coll. BUGNION, Muséum Paris (MNHN); Paradaniya, Ceylon, 1 female IX-1900, DISTANT Coll. 1911-383, det. as *Aethus maurus* Dall. (BMNH); Wellawaya, Ceylon, 1 male XI-05, DISTANT Coll. 1911-383, det. as *Aethus maurus* DALL. (BMNH); Sri Lanka, Nat. Park Yala, Mahasilawa, 8 km ENE Palatupana, 1 male 1 female 20 X 982, G. MEDVEDEV, ZAITZEV (ZIP); Sri Lanka, Colombo, 1 female 3 I 982, G. MEDVEDEV (ZIP); Colombo, Plössl, Ceylon, 1 female 4.2.78, Collection E. HEISS Innsbruck (EHC); Maragahawela, Sri Lanka, 1 female 7.11.1980, Tonkli P. leg. (NhMW).

BAKGLADESH: Feuchganj, Bangladesh, 1 female 14.IV.1977, N. YOSHIDA (NSMT).

BURMA: Pegu, 1 female, ATKINSON collection, Bought 1895 (HEC); Tenasserim, 1 male, ATKINSON collection, Bought 1895 (HEC); Young males, 1 female 1 male, L. FEA, V-X 88, det. as *Lactistes rastellus* by DISTANT, Museo Civico di Genova, det. as *Lactistes rastellus* (MCSN); Birmania, Prome, 1 male, FEA XII 1886, det. as *Lactistes rastellus* by DISTANT, Museo Civico di Genova (MCSN); Minhla, Birmania, 5 females 1 male, D. COMOTTO 18, det. as *Lactistes rastellus* by DISTANT, 1 male COMOTTO 81, det. as *Cydnus indicus* by DISTANT, 1 male COMOTTO 82, *Cydnus indicus* by DISTANT, Museo Civico di Genova (MCSN); Palon (Pegu), 1 female, L. FEA VIII. IX. 87, 198, det. as *Lactistes rastellus* by DISTANT, Museo Civico di Genova (MCSN); Birmanie, Rangun, 1 female, J. CLAUDE 1902, Muséum Paris (MNHN).

LAOS: Laos, Boneng N., Thakhek, 1 male 27.X.984, KABAKOV (ZIP); Laos, Vientian, 4 males 6 females 19-30.X.984 & 18.I.-1.II.986 (ZIP).

THAILAND: Sai Yok, waterfall area, 5 females 1 male 9 VIII 1979, B. PETERSEN leg. (ZMC, JAL); Thailand, 240 km NW Bangkok, 25 km NW Lan-Sak, 1 male 2 females III.1989, 110m, at light, leg. THIELEN (NhMW); Thailand, 90m, 150km NW Bangkok, 10km W Han Kha, 34 males 67 females VII.1990, at light, leg. THIELEN (NhMW, JAL); Thailand, 170 km NW Bangkok, 3 km W Ben Rei, 150 m, Licht, 12 males 13 females 8.1991, leg. THIELEN (NhMW, JAL).

INDONESIA: Iles Moluques, Celebes, Mandar, 1 male, Coll. R.I.Sc.N.B., det. as *A. indicus* (Lis, 1991b).

DISTRIBUTION. - India, Nepal, Pakistan, Bangladesh, Burma, Sri Lanka, Thailand, Laos, Sulawesi (one record).

It was recorded also from Cambodia, but unfortunately I had no specimens from this country to decide whether the record pertained either to *A. indicus* or to *A. pseudindicus*.

Previous records of *A. indicus* from the Australian Region, Philippines, Indonesia and Malaysia pertained to *A. philippinensis* (see Lis, 1993d). The records of *A. indicus* from China (HSIAO et al., 1977), Vietnam (Lis, 1991b), and Japan (KOBAYASHI, 1974; TAKAI et al., 1975; IKEMOTO et al., 1976a, 1976b; SCHAEFER, 1988) pertained to *A. pseudindicus* (see also Lis, 1993d). In Laos, Burma and Thailand occur both *A. indicus* and *A. pseudindicus*.

BIOLOGICAL DATA. - A majority of specimens has been collected at light. BREDDIN (1909) reported this species from a termites' nest; MAXWELL-LEFROY (1909) found it in concealments in a soil, and under fallen leaves all the winter. Several examined specimens have been found underground near cucurbitaceous plants.

REMARKS. - I had an opportunity to examine three males of *A. indicus* in which the clypeus borne two subapical peg-like setae; because all the other morphological characters, as well as the genital structures were the same as in normally developed specimens of *A. indicus* I regarded it as a case of the morphological aberration. The aberrant specimens of *A. indicus*, as well as of *A. pseudindicus*

can be easily distinguished from specimens of *A. yunnanus* (characterized by the pair of subapical peg-like setae on the clypeus) by the presence of 6-12 setigerous punctures on the costa (only 1-3 are present in *A. yunnanus*).

***Aethus islamabadensis* MOIZUDDIN & AHMAD**

(figs. 252-254)

*Geotomus islamabadensis* AHMAD, MOIZUDDIN & KHAN, 1979: 14 & 17, nomen nudum.

*Aethus islamabadensis* MOIZUDDIN & AHMAD, 1990: 314.

**DIAGNOSIS.** - The species is closely related to *A. indicus* but can be easily distinguished from the latter by the number of setigerous punctures on the pronotum and the costa (34-42 and 42-58 respectively in *A. islamabadensis*, 9-18 and 6-12 respectively in *A. indicus*).

**DESCRIPTION.** - Head blackish brown or black; clypeus slightly shorter than paraclypei, and without subapical setigerous punctures, almost smooth, laterally wrinkled and sometimes with a few tiny punctures; paraclypei, except posterior part, distinctly punctured (fig. 252); each paraclypeus with a row of 10-12 submarginal setigerous punctures (3-5 peg-like setae, 7 hair-like setae); eyes reddish brown or red, ocular index 2.86-3.15; ocelli of the same colour as eyes, interocellar index 5.0-8.0; antennae dark castaneous, 3rd, 4th and 5th segments apically yellowish brown; rostrum dark castaneous, reaching middle coxae.

Pronotum dark brown, calli and posterior part sometimes castaneous; disc densely and rugosely punctured with exception of calli and posterolateral angles; each lateral margin with a row of 34-42 submarginal setigerous punctures.

Scutellum of the same colour as pronotum, disc with distinct punctures of the same size as those on pronotum; anterolateral angles almost smooth, apex with tiny punctures.

Corium (especially mesocorium) somewhat paler than pronotum, distinctly punctured; clavus with two rows of punctures; mesocorium with two rows of punctures paralleling clavo-corial suture, basal part of mesocorial disc densely punctured, the remaining part sparsely punctured; exocorium with very dense puncturation; costa with 42-58 (52-58 in male, 42-45 in female) setigerous punctures; membrane milky brown, semihyaline, broader than abdomen and surpassing its tip.

Propleuron polished, dark castaneous, depression with a few punctures; apex of peritreme as in fig. 253.

Sternites castaneous, laterally wrinkled and punctured.

Legs dark castaneous, not specifically modified; tarsi yellowish brown.

Paramere as in fig. 254.

Measurements (male and female respectively): body length 6.10-6.96, 6.11-7.40; body width 3.80-3.85, 3.76-3.88; head length 0.92-1.03, 1.01-1.02; head width 1.36-1.50, 1.44-1.54; pronotum length 1.76-1.88, 1.84-1.95; pronotum width 3.40-3.66, 3.46-3.70; scutellum length 2.44-2.60, 2.47-2.58; scutellum width 2.20-2.32, 2.27-2.31; antennal segments: 0.20-0.26 : 0.32-0.35 : 0.38-0.41 : 0.39-0.46 : 0.38-0.47, 0.21-0.28 : 0.32-0.36 : 0.38-0.42 : 0.39-0.48 : 0.38-0.48.

**TYPE MATERIAL EXAMINED**

Paratypes of *Aethus islamabadensis* MOIZUDDIN & AHMAD: 1 female and 3 males: [PAKISTAN]: Host: on light, Loc: Allabad, Date: 10.3.80, Coll. RANA; *Aethus islamabadensis*, Paratype (NHMUK).

OTHER MATERIAL EXAMINED (1 male, 2 females)

PAKISTAN: Allabad, 2 females 1 male 7.2.80, coll. RANA det. as *Scutellocoris fusca*, AHMAD & MOIZUDDIN det. (NHMUK).

DISTRIBUTION. - Pakistan.

BIOLOGICAL DATA. - The species was reported as collected at light and under roots of grasses (AHMAD et al., 1979; MOIZUDDIN & AHMAD, 1990).

REMARKS. - In the revision of Cydnidae of Indo-Pakistan area (MOIZUDDIN & AHMAD, 1990) the authors wrote in the comparative note of *A. islamabadensis*: "it can easily be separated from [*A. indicus*] by having pronotum very slightly convex in male in comparison to pronotum distinctly convex in male of *A. indicus* and by other characters as noted in the key and description". Unfortunately, *A. indicus* is not redescribed in that paper, and the only difference between *A. indicus* and *A. islamabadensis* in the key to species is the body colour: "Body black, brownish to dark brownish" (leading then to *A. islamabadensis*) in opposite to "Body piceous" (leading then to *A. indicus*). I have found the shape of pronotum the same in both species. Additionally, the body colour of *A. indicus* varies from pale brown, throughout brown and piceous to blackish brown and black. As one can easily realize, both characters mentioned above are useless in separating *A. islamabadensis* from *A. indicus*; the number of submarginal setigerous punctures on the pronotum and the costa is the most reliable feature.

### ***Aethus karlaicus*, new species**

(fig. 255)

DIAGNOSIS. - The small (about 4.0 mm in length) and uniformly brownish black body, the costa bearing less than 10 setigerous punctures, each lateral margin of the pronotum bearing less than 20 submarginal setigerous punctures, the puncturation of the posterior half of pronotum sparse, and the paramere with the apical bunch of long hairs (fig. 255) will easily separate this new species from any other within the genus.

DESCRIPTION. - Body brownish black, apex of scutellum and apical half of corium somewhat more castaneous.

Head, except clypeus and vertex, sparsely punctured; clypeus almost as long as paraclypei, subapically with a pair of long hair-like setae; each paraclypeus with a row of 9 submarginal setigerous punctures (6 peg-like setae, and 3 hair-like setae); eyes reddish brown, narrow, ocular index 4.0; ocelli reddish brown, interocellar index 4.1; antennae dark brown, apices of segments pale brown; rostrum brown, reaching middle coxae.

Pronotum distinctly punctured, punctures larger than those on head; calli, umbones and posterior margin impunctate; anterior margin deeply angularly insinuated; each lateral margin with a submarginal row of 15-16 setigerous punctures.

Scutellum evenly and densely punctured, punctures of the same size as those on pronotum; puncturation more crowded than that of pronotal disc; anterolateral angles and extremely tip impunctate.

Corium densely punctured; clavus with 3 rows (two partial, and one complete) of large punctures; mesocorium with two rows paralleling clavo-corial suture,

mesocorial disc evenly punctured, basal half with large punctures, the apical with smaller punctures; exocorium with one median row of punctures; costa with 8 setigerous punctures; membrane milky brown, only slightly surpassing the posterior extremity of abdomen.

Propleuron polished, depression with a few punctures.

Lateral parts of abdomen coarsely punctured.

Legs dark castaneous, not specifically modified.

Paramere with the apical bunch of long hairs (fig. 225).

Measurements (male only): body length 4.02; body width 2.42; head length 0.74; head width 1.01; pronotum length 1.41; pronotum width 2.36; scutellum length 1.68; scutellum width 1.61; antennal segments: 0.18 : 0.21 : 0.27 : 0.31 : 0.34.

TYPE MATERIAL EXAMINED

Holotype male: [INDIA]: India, Maharashtra, Karla, 16.VII.1967, ex. coll. R. HOLYNSKI (JAL).

DISTRIBUTION. - India.

***Aethus mumba* (Distant)**

(figs. 256-260)

*Cydnus mumba* DISTANT, 1908: 426.

*Aethus mumba*: MOIZUDDIN & AHMAD, 1990: 312; Lis, 1991b: 176.

DIAGNOSIS. - The clypeus subapically with a pair of long hair-like setae coupled with the body length exceeding 5.0 mm and each lateral margin of the pronotum bearing 40-48 submarginal setigerous punctures, separate this species from all its congeners.

DESCRIPTION. - Body uniformly coloured, from castaneous to black.

Head with clypeus impunctate, only slightly shorter than paraclypei, bearing two subapical long hair-like setae (fig. 256); each paraclypeus slightly wrinkled and distinctly coarsely punctured, submarginally with a row of 14-18 setigerous punctures (7-10 peg-like setae and 4-8 hair-like setae); vertex impunctate; eyes narrow, brown, ocular index 4.11-5.18; ocelli reddish brown, interocellar index 3.0-4.0; antennae brown; rostrum brown, reaching the anterior margin of middle coxae.

Pronotum distinctly coarsely punctured, calli and posterior part smooth and impunctate (fig. 257); umbones slightly swollen; each lateral margin with 40-48 submarginal setigerous punctures.

Scutellum evenly punctured, punctures smaller than those on pronotum; anterolateral angles and apical part of apex impunctate; the latter broadly rounded (fig. 257).

Corium with mesocorium sometimes a little bit paler than pronotum and scutellum; clavus with one complete and two partial rows of punctures; mesocorium densely and evenly punctured and with two rows of punctures paralleling clavo-corial suture; exocorium evenly punctured (fig. 257); costa with 18-23 setigerous punctures; membrane hyaline, slightly browned, decidedly surpassing the tip of abdomen.

Propleuron alutaceous, depression with several punctures; evaporatoria as in fig. 258.

Sternites brownish black, laterally densely punctured and slightly wrinkled.

Legs chocolate brown, not specifically modified; tarsi yellowish brown.



Penis as in fig. 260, paramere as in fig. 259.

Measurements (male only): body length 5.30-5.70; body width 3.19-3.27; head length 0.71-1.05; head width 1.38-1.43; pronotum length 1.66-1.76; pronotum width 3.05-3.13; scutellum length 2.15-2.24; scutellum width 2.15-2.19; antennal segments: 0.25-0.29 : 0.24-0.28 : 0.28-0.29 : 0.31-0.33 : 0.31-0.32.

TYPE MATERIAL EXAMINED

Lectotype male of *Cydnus mumba* DISTANT (designated by LIS, 1991b: 176): [INDIA]: Bombay, DIXON; DISTANT coll., 1911-383; Type; *Cydnus mumba* DIST., Type; Brit. Mus. Type No. Hem. 297, Lectotype det. J.A. LIS 1990 (BMNH).

Paralectotype male: [INDIA]: Bombay, DIXON; DISTANT coll., 1911-383; Paratype; *Cydnus mumba* DIST. (BMNH).

OTHER MATERIAL EXAMINED (1 male)

INDIA: Bandra, India, Dr. JAYAKAR, 1 male 1905-152 (JAL).

DISTRIBUTION. - India.

***Aethus nepalensis* (WESTWOOD)**

(figs. 261-264)

*Cydnus Nepalensis* WESTWOOD, 1837: 19; LETHIERRY & SEVERIN, 1893: 67.

*Cydnus nepalensis*: STÅL, 1876: 26.

*Aethus nepalensis*: SIGNORET, 1883d: 216; LIS, 1991b: 177.

*Cydnus Bengalensis* LETHIERRY, 1891: CXLI; LETHIERRY & SEVERIN, 1893: 65, new synonym.

*Cydnus bengalensis*: DISTANT, 1902: 93.

*Aethus bengalensis*: AHMAD et al., 1979: 14 & 17; MOIZUDDIN & AHMAD, 1990: 313.

DIAGNOSIS. - The species is best diagnosed by the set of following characters: the body uniformly black, blackish brown or dark castaneous, its length not exceeding 5.0 mm; the clypeus with a pair of long subapical hair-like setae; each paraclypeus with a row of 11-14 submarginal setigerous punctures; lateral margins of the pronotum each with 24-40 submarginal setigerous punctures; the costa with 14-20 setigerous punctures; the posterior half of the pronotum with crowded puncturation.

DESCRIPTION. - Body uniformly coloured, from dark castaneous to black.

Head dorsally coarsely punctured, except for vertex and clypeus; the latter shorter than paraclypei, subapically with two long hair-like setae (fig. 161); paraclypei almost joined in front of the clypeus, each submargin with a row of 11-14 setigerous punctures (9-10 peg-like setae, and 2-4 hair-like setae); eyes narrow, brown or dark brown, ocular index 3.71-4.50; ocelli of the same colour as eyes, interocellar index 3.0-4.0; antennae brown; rostrum brown, reaching middle coxae.

Pronotum densely punctured with exception of calli and posterolateral angles, punctures larger than those of head (fig. 262); posterior half sometimes transversely wrinkled in the middle; each lateral margin with 24-40 submarginal setigerous punctures.

Scutellum distinctly and densely punctured with exception of anterolateral angles, punctures smaller than those on pronotum (fig. 262); apex broadly rounded.

Corium conspicuously punctured, punctures smaller than those on pronotum and scutellum; clavus with one complete and two partial rows of punctures; mesocorium evenly punctured, and with two rows of punctures paralleling clavo-corial suture; exocorium almost evenly punctured; costa with 14-20 setigerous punctures; membrane hyaline, slightly browned, surpassing the tip of



abdomen.

Propleuron polished without punctures in depression; evaporatoria and apex of peritreme as in fig. 263.

Sternites glossy in the middle, sides striated and punctured.

Legs brown, not specifically modified; tarsi light brown.

Paramere as in fig. 264.

Measurements (male and female respectively): body length 3.62-3.87, 3.24-4.02; body width 2.19-2.49, 2.07-2.56; head length 0.79-0.80, 0.73-0.76; head width 1.02-1.06, 0.98-1.09; pronotum length 1.09-1.22, 1.02-1.22; pronotum width 2.12-2.32, 1.95-2.22; scutellum length 1.41-1.61, 1.07-1.51; scutellum width 1.44-1.58, 1.29-1.47; antennal segments: 0.21-0.24 : 0.17-0.21 : 0.21-0.24 : 0.21-0.26 : 0.22-0.24, 0.21-0.22 : 0.19-0.21 : 0.21-0.24 : 0.21-0.25 : 0.22-0.23.

#### TYPE MATERIAL EXAMINED

Lectotype female of *Cydnus nepalensis* WESTWOOD (designated by LIS, 1991b: 177): [NEPAL]: Type; Type, WESTW. (HOPE) C. Hemipt. 1837, Part I, page 19, DISTANT P.Z.S. 1900, p.807-825; *Cydnus nepalensis* WESTW.; Type Hem. No. 70, *Cydnus nepalensis* WESTWOOD, Hope Dept. Oxford, Lectotype (HEC).

Holotype female of *Cydnus bengalensis* LETHIERRY: [INDIA]: Tetara (Bengale); *Cydnus bengalensis* LETH. (MNHN).

#### OTHER MATERIAL EXAMINED (8 males, 4 females)

NEPAL: Pokhara, 3,000ft, 1 female 17.IV.1954, J. QUINLAN (JAL); East Nepal, Chisapani 2500m, Dolakha Dist., 1 male 17.Oct.1979, M. TOMOKUNI leg. (NSMT); Kathmandu, Nepal, 1 male Sept. 18-27, 1979, M. SATO leg. (NSMT).

INDIA: Moti-Nala et env., Indes Anglaises (Prov. centr.), 1 female 1 male Avril 1914, G. BABAULT, Muséum Paris (MNHN, JAL); W. Almora, Kumaon, 2 males, India, H.G.G. CHAMPION, coll. B.M. 1927-409 (BMNH, JAL); Ranchi, Irvine, 2 females 2 males, DISTANT Coll., B.M. 1911-383 (BMNH, JAL); Lucknow, Mus. Collr., 1 male 5-XI-07, From. Ind. Mus., DISTANT Coll., B.M. 1911-383 (BMNH).

DISTRIBUTION. - India, Nepal, Bangladesh.

### *Aethus philippinensis* DALLAS

(figs. 250-251)

*Aethus philippinensis* DALLAS, 1851: 118; DOHRN, 1859: 9; WALKER, 1867: 160; STÅL, 1876: 26; LETHIERRY & SEVERIN, 1893: 67; LIS, 1993d: 108 [as a distinct species].

*Aethus perosus*, not of STÅL: STÅL, 1864: 23 [part], 1870: 614, 1876: 18 [part].

*Cydnus indicus*: LETHIERRY & SEVERIN, 1893: 66 [part].

*Cydnus indicus*: SIGNORET, 1881a: 632 [part]; BREDDIN, 1900: 289, 1906: 10; SCHOUTEDEN, 1933: 44; CHINA, 1935: 295.

*Aethus indicus*: WALKER, 1867: 155 [part]; VOLLENHOVEN, 1868b: 17; STÅL, 1876: 27; SIGNORET, 1882a: 28 [part]; ATKINSON, 1887: 47 [part]; FROESCHNER, 1967: 12; LINNAVUORI, 1977: 37, 1993: fig. 52; LIS, 1991b: 175 [part].

*Cydnus indicus* ab. *rufino* BREDDIN, 1905: 114, syn. with *A. philippinensis* by LIS, 1993d: 108.

*Cydnus ceylonicus* MAYR, 1866: 362 [lectotype from Java]; STÅL, 1876: 27 [part]; DISTANT, 1902: 91 [part], syn. with *A. philippinensis* by LIS, 1993d: 108.

*Cydnus ceylonicus* MAYR, 1868: 9, objective synonym of *C. ceylonicus* MAYR, 1866.

*Cydnus Ceylonicus*: LETHIERRY & SEVERIN, 1893: 65 [part].

*Aethus? ceylonicus*: SIGNORET, 1882a: 30 [part].

*Aethus ceylonicus*: WALKER, 1867: 158 [part]; KIRBY, 1891: 80 [part].

*Lactistes rastellus*, not of SCHIÖDTE: DISTANT, 1899a: 218.

*A. philippinensis* is morphologically identical with both *A. indicus* and *A. pseudindicus*; its proper status was established only recently (LIS, 1993d). It differs from both the sibling species in the shape of male genitalia.

The paramere (fig. 251) is not as stout as in *A. pseudindicus*, but stouter than in *A. indicus*, the outer lobe is not broadly rounded, and the upper edge of blade is long and moderately steep. The opening of male genital capsule (fig. 250) is

dorso-laterally conspicuously convex.

#### TYPE MATERIAL EXAMINED

Lectotype male of *Aethus philippinensis* DALLAS (designated by LIS, 1993d: 109): [PHILIPPINES]: Type; 4222; *Aethus philippinensis* DALLAS, Type; *philippinensis* identified by DALLAS; Brit. Mus. Type No. Hem. 295, Lectotype det. J.A. LIS 1990 (BMNH).

Lectotype male of *Cydnus ceylonicus* MAYR (designated by LIS, 1993d: 109): [INDONESIA]: Novara Exp., Java; *ceylonicus* det. MAYR; Lectotype, *Cydnus ceylonicus* MAYR, labelled by R.C. FROESCHNER 59; Coll. Nat. Mus. Wien (NhMW).

#### OTHER MATERIAL EXAMINED (129 males, 171 females)

PHILIPPINES: Los Banos, 1 female, P.I. BAKER, Zool. Mus. Helsinki, det. as *A. indicus* (ZMHU); Philippine Isl., 1 female, E.M. LEDYARD, B.M. 1925-191 (BMNH); Plason, Luzon 89, 1 male, det. as *A. indicus* (NhMW); Philippines, 1 female, C. SEMPER leg. (ZIZM); Manila, 1 female, Dr. H. HALLIER leg. XI-XII.1903, ded. 9.VI.1904 (ZIZM); Philippines, Insel Negros, Labartola bei Pulpandan, 1 female, Eing. Nr. 56 1925 (ZIZM); Philippines Isls, Leyte, Abuyong 35, 9 males 12 females VII-7-14-1961, Mi.S. Tacloban, P.I. Natl. Mus. & Am. Mus. Nat. Hist. Expedition (AMNH, JAL); Philippines, Puerto Princesa, C. Palawan Is. 2 females 6.IX.1985, M. TOMOKUNI (NSMT).

MALAYSIA: Malaysia, Sarawak 1993, Batang Ai NP, Engkari, E. Bandar Sri Amman, 1 male 19-20.2., leg. ZETTEL (7), (c) Sepaya Longhouse, am Licht (NhMW); Brunei, Kilanas Ag. S., 1 female 1 male 30.IX.80, No. 1660, MV light, C.I.E. A. 12528 (BMNH, JAL); Kuala Lumpur, Malaya, 1 male June 1921 (JAL); Malaisia, Johore, 1 male, det. as *A. indicus* (IRSNB); Perak, Kwala-Kangsar, 1 female, GRUBAUER 1902, det. as *indicus* (NhMW); Perak, 1 male, SHARP Coll., 1905-313 (BMNH); Selangor, Malay Penin., F.M.S., 1 mile Cheras road, 1 male March 23 1923, 1 male 12.2.1924, at light, Ex F.M.S. Museum, B.M. 1955-354 (BMNH, JAL); Serdang, Malaya, 1 female 22.2.1933, N.C.E. MILLER, Agric. Dept. (BMNH); Malay Penin., Ex Coll. Agr. Dept., Blackwall Est-klang, 2 males 1.7.16, Ex F.M.S. Museum, B.M. 1955-354 (BMNH); Malay States, Bukit Kutu, 3,300ft, 1 female, A.R. SANDERSON, Brit. Mus. 1933-523 (BMNH); Malay Penin., Pahang F.M.S., Kuala Lahan, 300', 1 male Nov. 25th 1921, Ex F.M.S. Museum, B.M. 1955-354 (BMNH).

INDONESIA: Sumatra, 1 male, B. de SAINT POLLIAS 1880, Muséum Paris (MNHN); Sumatra, Bindjet-Medan, 25 females 17 males, Dr. C.R. PFISTER, Coll. Dr. D. MAC GILLAVRY (ZMA, JAL); Sumatra, Labuan, 2 females 1922-23, Bilik Palm., Zool. Mus. Helsinki, det. as *A. indicus* (ZMHU); Sumatra, Palembang, 3 females 2 males, DOUGLASS 1916, Coll. Dr. D. MAC GILLAVRY (ZMA, JAL); Sumatra, Padang, 2 females 1925-27, J.J. de GROOT, Coll. Dr. D. MAC GILLAVRY (ZMA); Sumatra, Kepala Roessa, Bindjei Deli, 1 female VIII-IX 1922, leg. L.J. TOXOPEUS, 120m, Coll. Dr. D. MAC GILLAVRY (ZMA); Sumatra, Poinan, 1 female, WEYERS, det. as *A. indicus* (IRSNB); Kwalu, NO-Sumatra, 2 males 3 females, Dr. Volz leg., ded. 15.VIII.1898 (ZIZM); Sumatra, Bela Negri Bahroe, Dr. C.R. PFISTER, 3 males 1 female, coll. Dr. D. MAC GILLAVRY (ZMA); O. Sumatra, Marbau, 2 males 4 females 1932, Dr. HOPMAN, coll. Dr. D. MAC GILLAVRY (ZMA); Java, 223, Atkinson Coll. 92-3, det. as *Cydnus indicus* HOPE, LETHIERRY, Type [this specimen was erroneously labelled as the type] (BMNH); Sumatra, 180 m, Dolok Merangir, 1 male April-June 1970, E.W. DIEHL (AMNH); Java, 2 males, *Geotomus*, collection E. de BERGEVIN, det. as *A. indicus*, Muséum Paris (MNHN); Java, Buitenzorg, 1919-1920, 1921, 7 females 4 males, W.C. v. HEURN, Coll. Dr. D. MAC GILLAVRY (ZMA, JAL); Java, Buitenzorg, 1 male, K. KRAEPELIN leg. 24.II-12.III.1904, ded. 8.VI.1904, det. as *Cydnus indicus* WESTW. by G. BREDDIN determ. (ZIZM); Java occident., Mons Gede, 1 male, 4000', Aug. 1892, H. FRUHSTORFER, Muséum Paris, coll. NOUALHIER (MNHN); Java, Preanger, 1 male, coll. NOUALHIER 1898, Muséum Paris MNHN, JAL); Java, Preanger, 2 males, J.B. CORPORAL, Coll. Dr. D. MAC GILLAVRY (ZMA); Java, Plabonan Ratoe, 1 male, J.B. LEDRU, R. OBERTHUR 1898, Muséum Paris (MNHN); Java, 1 male, de la SAVINIÈRE 1878 (JAL); Java, 3 females 1 male, Zool. Mus. Helsinki, det. as *A. indicus* (ZMHU); Java, 1 male, MAINDRON 1885, Muséum Paris, det. as *A. indicus* (MNHN); Java, Tjingsana, Mts Djampang, 2 females 1 male, det. as *A. indicus* (IRSNB, JAL); Java, Toegoe, 1 male 1902, ex coll. OBERTHUR, det. as *A. indicus* (IRSNB); Java, Wynkoopsbay, 2 males II 1937, det. as *A. indicus* (IRSNB); Java, Pengalengan, 4000', 1893, 1 male, H. FRUHSTORFER, det. as *Aethus indicus* (HNHM), Java, Ploem, 1870, 1 male, det. as *philippinensis*, det. SIGNORET (NhMW); Java, 1 male 1868, Baron WARSBERG, det. as *philippinensis*, det. SIGNOR. (NhMW); Java, 1 female, det. as *indicus*, coll. SIGNORET (NhMW); Java, Dampit, Soember Pakel, 1916, 3 females 6 males, Coll. Dr. D. MAC GILLAVRY (ZMA, JAL); Java, Samarang, 1 male, P.M. v. DOESBURG (ZMA); Java, Weliri Pllelen, 1 female 1 male, Siloeuwok Sawangan, Mac GILLAVRY 1925, Coll. Dr. D. MAC GILLAVRY (ZMA); Java occident., Sakabumi, 2000', 2 males 1893, H. FRUHSTORFER, Java, H. FRUHSTORFER, vend. 10.II.1894, det. as *Cydnus indicus* WESTW., G. BREDDIN determ. (ZIZM); Java, Tjilatjap, 2 males, DRESCHER, III 1935, Coll. Dr. D. MAC GILLAVRY (ZMA); Java, Tenggergeb., 5 males 2 females X.98, DRESCHER leg., Museum Natura Artis Magistra (ZMA); Java, Djakarta, 2 males 1 female 24.5.1973, H. HAZEWINDEL (ZMA); Nord-Borneo, 1 male, ex coll. FRUHSTORFER, *indicus* (NhMW); Borneo, 1 male, Muséum Paris, coll. FALLOU, det. as *A. indicus* (MNHN); Borneo, 1 female, H. OBERTHUR 1898, Muséum Paris (MNHN); Borneo occ., Setipas, J.B. LEDRU, 4 females 1897, ex coll. OBERTHUR, det. as *A. indicus* (IRSNB, JAL); S. Borneo, 1 male, H. FRUHSTORFER, det. as *Aethus indicus* (HNHM); Borneo, Pontianak, 1 female, R. OBERTHUR 1898, Muséum Paris, det. as *A. indicus* (MNHN); Tandjong, Südost-Borneo, 10 males 9 females, Fritz Suck, ded. 31.XII.1895, det. as *Cydnus indicus* WESTW., G. BREDDIN determ. (ZIZM); Bandjermassin, Borneo, 1 female,

Suck leg., ded. 28.IV.94 (ZIZM); Sulawesi Utara: Tangkoko Nat. Park, between P.P.R. bung. and Batuputi, 9-XI-1985, Station: 087, 1 male, Project Wallace; Dumoga-Bone Nat. Park, Base Camp (200m), 20-X-1985, Station: 039, 43 females 18 males, Project Wallace, det. as *A. indicus* (IRSNB, JAL); Indonesia, Sulawesi Utara, Dumoga-Bone N.P., 1 female 22 Aug. 1985, Coll. Chen YOUNG, Base Camp 211 m, Project Wallace (CMNH); Celebes, Dumoga-Bone Base Camp, at light, 1 female 1 V 1985, 1 female 21 V 1985, Project Wallace, M.E. FRANCISCOLO, Museo Civico di Genova, det. as *A. indicus* (MCSN); N. Celebes, River Tumpun Tribot, 1 female 15 IV 1985, Project Wallace, M.E. FRANCISCOLO, Museo Civico di Genova, det. as *A. indicus* (MCSN); Sulawesi Utara, Dumoga-Bone N.P., 2 males 2 females March 1985, Base Camp ca 90m, R.Ent.Soc.Lond., Project Wallace, B.M. 1985-10 (BMNH, JAL); Sulawesi Tengah, Luwuk-Biak-Poh Road at km 25, 10 km N of Biak, 300m, 1 female 8.X.1989, J.P. DUFFELS, Sample Sul. 4, Disturbed rainforest along river, at light (ZMA); Sulawesi Tengah, Nr. Morowali, Ranu River Area, 3 males 10 females 27.I.-20.IV.1980, Lowland rain forest, at light, M.J.D. BRENDLE, B.M. 1980-280 (BMNH, JAL); Halmahera, Ternate, 1 female, det. as *A. indicus* (ZIL); Ambon, 1 female XI 1921-III 1922, L.J. TOXOPEUS, Coll. Dr. D. MAC GILLAVRY (ZMA); Buru, Station 1, 2 females 1 male, L.J. TOXOPEUS, Coll. Dr. D. MAC GILLAVRY (ZMA, JAL); Flores, Larantoka, 1 male Jan. 09, Museum Natura Artis Magistra (ZMA).

SINGAPORE: Singapore, Inou Or., 2 females, Muséum Paris (MNHN).

NICOBAR ISLS: presque'île de Malacca, 4 females 2 males, Errington de la CROIX et P. CHAPE 1899, Muséum Paris (MNHN, JAL).

INDIA: S. India, Yercaud, Shevaroy Hills, 1 male, (4500ft), II/III-1955, Rec. P.S. NATHAN, det. as *A. indicus* (JAL).

**DISTRIBUTION.** - Indonesia (Bali, Borneo, Sulawesi, Flores, Halmahera, Java, Sumatra, New Guinea), Malaysia, Nicobar Isles, Philippines, Papua New Guinea, Australia, Solomon Isles; one specimen was reported also from South India.

The specimens from Singapore are females unfortunately, and they are classified within *A. philippinensis* only tentatively.

**BIOLOGICAL DATA.** - A majority of examined specimens has been collected at light, several in tropical rain forest.

### ***Aethus pseudindicus* Lis**

(figs. 248-249)

*Cydnius indicus*, not of WESTWOOD: HOFFMANN, 1931: 139; Wu, 1933: 208, 1935: 268.

*Aethus indicus*, not of WESTWOOD: KOBAYASHI, 1974: 123; TAKAI et al., 1975: 61; IKEMOTO et al., 1976a: 231, 1976b: 239; HSIAO et al., 1977: 44; SCHAEFER, 1988: 24; LIS, 1991b: 175 [part]; LIN & ZHANG, 1992: 218.

*Macroscytus expansus*, not of SIGNORET: TAKARA & HIDAKA, 1960: 182.

*Aethus pseudindicus* LIS, 1993d: 108.

The species was described only recently (LIS, 1993d); it is morphologically identical with both *A. indicus* and *A. philippinensis*, and the shape of male genital structures is the only character reliable for separation of the three species.

The paramere in *A. pseudindicus* (fig. 249) is stouter than in *A. indicus*, the outer lobe is broadly rounded, and the upper edge of blade is short and steep. The opening of male genital capsule (fig. 248) is dorsally almost round, without incision.

#### **TYPE MATERIAL EXAMINED**

Holotype male of *Aethus pseudindicus* LIS: [VIETNAM]: Nha-Trang, S. Annam, DAVYDOV 930-34, *Aethus pseudindicus* LIS, det. J.A. LIS, Holotype (JAL).

Paratypes: 1 male: [CHINA]: Kiang-Si, VILLARD, *A. indicus*, *Aethus pseudindicus* LIS, det. J.A. LIS, Paratype (NHMV); 1 male: [CHINA]: Formosa, SAUTER, Takao 1907, *A. indicus*, *Aethus pseudindicus* LIS, det. J.A. LIS, Paratype (HNHM); 2 males: [CHINA]: Formosa, SAUTER, Teraso, IV 1909, *A. indicus*, *Aethus pseudindicus* LIS, det. J.A. LIS, Paratype (HNHM, JAL); 1 male: [LAOS]: Asia, Laos, *A. indicus*, *Aethus pseudindicus* LIS, det. J.A. LIS, Paratype (JAL); 1 male 3 females: [VIETNAM]: Tonkin, SAUTER 1901, *Aethus pseudindicus* LIS, det. J.A. LIS, Paratype (SMNS, JAL); 1 male: [LAOS]: Laos, STAUDINGER and BANG-HAAS, *A. indicus*, *Aethus pseudindicus* LIS, det. J.A. LIS, Paratype (JAL); 1 male: [CHINA]: Kushan, Fooschow, Fuc-zen, Kitaj, M.S. YANG, 6/IX 957, *Aethus pseudindicus* LIS, det. J.A. LIS, Paratype (JAL); 1 male:

[VIETNAM]: Pr. Annam, Thang Hoa, ex. col. OBERTHUR, *A. indicus*, *Aethus pseudindicus* Lis, det. J.A. Lis, Paratype (JAL).

OTHER MATERIAL EXAMINED (75 males, 91 females)

BURMA: U. Burma, Tatkon, 1 male 6-7.IX.11, FLETCHER coll. (JAL); Burmah, 1 male, Vigols, Distant Coll. 1911-383, det. as *Cydnus philippinensis* DALL. (BMNH); Kyun-Chang, Burma, 1 male 30.VIII.1976, N. YOSHIDA leg. (NSMT).

LAOS: Laos, Tonkin, 1 female 1 male, STAUDINGER & BANG-HAAS, det. as *Aethus indicus* (Ww.) by J.A. Lis (ZIP); Vientiane, 1 male 19-V-1917, R.V. de SALVAZA, Museum Leiden, det. as *Cydnus indicus* WESTW. (RNH).

VIETNAM: Annam, Phuc-Son, Nov. Dez., H. FRUHSTORFER: 1 male, det. as *Aethus indicus* (HNHM), 1 female 2 males (NhMW), 4 males 8 females (ZIZM), 1 female, collectie C. et O. VOGT (ZMA); Pr. Annam, Thang Hoa, 1 female 3 males, ex. col. OBERTHUR (IRSNB); Hanoi (Tonkin), 1 male 9.07.12, Demange, Muséum Paris, coll. E. FLEUTIAUX 1919 (MNHN); Lao-Kay (Tonkin), 1 male, Zool. Mus. Helsinki (ZMHU), 3 females 1 male, coll. E. FLEUTIAUX 1919, Muséum Paris (MNHN); Nui-Sap, Cochinchine, 4 females 1 male, Muséum Paris (MNHN, JAL); Prov. Ha-Tinh, foretiere HÜNG-SƠN, forêt trop. pluv., 1 male, a la lumière, 15.VIII.1963, T. POCs (HNHM); Saigon, 1 male 8.10.37, Muséum Paris, coll. E. FLEUTIAUX 1919 (MNHN); Central Tonkin, Chiem-Hoa, 1 female, Aug. Sept., H. FRUHSTORFER, det. as *indicus* (NhMW); Tonkin, Phu Lang Thuong, 1 male 18 Mai 07, det. as *Geotomus*, Muséum Paris, coll. BERGEVIN (MNHN); Tonkin, Phu Lang Thuong, 1 male, collection E. de BERGEVIN, det. as *Aethus yunnanus* HSIAO by J.A. Lis (MNHN); Nha-Trang, S. Annam, 1 female 1 male, DAVIDOV 930-34, det. as *A.indicus*, det. J.A. Lis (ZIP); environ of Kao-Bang, S. Vietnam, 1 male 25.IV.1960, E. IZUCH, det. as *Aethus yunnanus* HSIAO by J.A. Lis (ZIP); Tonkin, 1 female, Collection E. de BERGEVIN, det. as *Aethus yunnanus* HSIAO, det. J.A. Lis (MNHN); Hanoi, 1 male, 3964, *Cydnus*, Collection E. de BERGEVIN, det. as *Aethus yunnanus* HSIAO by J.A. Lis (MNHN); Hanoi City, Ho Tay, 1 female, No.4, on light, 8.X.1986, leg. VASARHELYI (HNHM); Tonkin, env. d'Hanoi, 39 females 23 males, A. KREMPF 1908, Muséum Paris, Aout, det. as *Cydnus indicus* WESTW., We-I YANG by 1935, det. as *Aethus yunnanus* HSIAO by J.A. Lis (MNHN, JAL); Tonkin, reg. de Hoa-Binh, 4 females 5 males, A. de COOMAN 1927, Muséum Paris, det. as *Cydnus indicus* WESTW. by We-I YANG 1935, det. as *Aethus yunnanus* HSIAO by J.A. Lis (MNHN); Tonkin Centr., env. de Yen-Bai, 2 females 2 males, A. WEISS 1901, Avril-Juin, Muséum Paris, det. as *Cydnus indicus* WESTW. by We-I YANG 1935, det. as *Aethus yunnanus* HSIAO by J.A. Lis (MNHN); Haut Tonkin, Laokay, 1 male, Vitalis de SALVAZA, Mme A. VUILLET 1920, Muséum Paris, det. as *Aethus yunnanus* HSIAO by J.A. Lis (MNHN); Tonkin, Son-Tai, 1 male, coll. NOUALHIER 1898, Muséum Paris, det. as *Aethus yunnanus* HSIAO by J.A. Lis (MNHN); Hanoi, 1 female, Mai, coll. A. BONHORE 1909, Muséum Paris, det. as *Aethus yunnanus* HSIAO by J.A. Lis (MNHN); Frontiere Chine-Tonkin, region de Lao-Kay et Ho-Kheou, 1 female, Ch. DUPONT 1900, Muséum Paris, det. as *Aethus yunnanus* HSIAO by J.A. Lis (MNHN); Quang Chu, Prov. Bac Thai, 500m, 22°00'N, 105°50' E, 1 male, at light, No. 226, 24.V.1987, MATSKASI-OLAAH-TOPAL (HNHM); Tonkin, Ban Nam Coun, 1 male Aug. 1917, R.V. de SALVAZA, det. as *Aethus indicus* WESTW. (BMNH); N-Vietnam, Hanoi, 3 females 20-30.IV.1991, at light, leg. E. JENDEK 1991 (NhMW); N-Vietnam, Phuc Phuong N.P., 100km S Hanoi, 2 males 6 females 2-12.V.1991, leg. E. JENDEK 1991 (NhMW, JAL); Vietnam, Tam Dao, Son dynh, 1 female 28.XI-2.XII.61, O. KABAKOV (ZIP); Vietnam, Ha Son-Binh, 10 km SW Hoa Binh, 1 female 17.X.1976, L. MEDVEDEV leg. (JAL); Vietnam, Ha Son-Binh, Hoa-Binh, 1 male 1 female 15-21.X.76, L. MEDVEDEV leg. (JAL).

HONG KONG: Fr. fld., Hong Kong, 1 male 1867, det. as *Cydnus indicus* (NhMW).

CHINA: Foochow, 2 females 1 male 1937-38, M.S. YANG, Pres. by Com. Inst. Ent., B.M. 1948-536, 1948-548 (BMNH); S. China, Canton, Honam Is., 1 female 28 June 1926, Wm. E. HOFFMAN, Brit. Mus. 1931-284 (BMNH); China, Futschau, 3 males 1 female, G. SIEMSEN leg., vend. 25.8.1905 (ZIZM); Prov. Fo-Kien (China), 4 males 3 females, G. SIEMSEN vend. 25.VIII.1905 (ZIZM); Nanning Kwangai, China, 1 male, E. le MOULT, Museum Leiden, det. as *Cydnus indicus* WESTW. (RNH); Botel-tobago I., Formosa, 1 male 1939, T. KANEKO, NSMT-I-He 02794 (NSMT); Kuraru, Formosa, 1 female 6-V.1926, T. KANO, NSMT-I-He 3788 (NSMT).

THAILAND: Thailand, Bangsaen, 1 male 1 female 16.XI.1968, M. SATO leg. (NSMT).

DISTRIBUTION. - North Burma, South China (Fujian, Jiangxi, Guangdong, Guangxi, Yunnan, Hainan, Taiwan), Hong Kong, Laos, Vietnam, Thailand, Japan.

BIOLOGICAL DATA. - The species was recorded on seeds of *Setaria viridis* and *Digitaria sanguinalis* (Graminae) in Japan (KOBAYASHI, 1974: IKEMOTO et al., 1976a). It was also observed as a house frequenting pest (TAKAI et al., 1975).

Several examined specimens have been collected at light in a tropical forest.

***Aethus tanna* (Distant)**

(figs. 265-267)

*Cydnus tanna* DISTANT, 1908: 427.*Aethus tanna*: HASEGAWA, 1962: 6; MOIZUDDIN & AHMAD, 1990: 312; LIS, 1991b: 179.

**DIAGNOSIS.** - The bicoloured body (fig. 265) with the corium yellow or yellowish brown (conspicuously paler than the rest of dorsum), will permit ready recognition of this species within the genus.

**DESCRIPTION.** - Head blackish brown, lateral margins brown, sometimes dorsal surface entirely brown; paraclypei with large punctures, clypeus and vertex impunctate; clypeus as long as or slightly shorter than paraclypei, subapically with 2 long hair-like setae; each paraclypeus with a row of 9-11 corium setigerous punctures (7-8 peg-like setae and 2-4 hair-like setae); eyes reddish brown or blackish brown, ocular index 3.50-4.35; ocelli of the same colour as eyes, interocellar index 4.5-6.5; antennae brown or pale brown; rostrum brown or pale brown, reaching middle of mesosternum.

Pronotum brown, blackish brown or almost black, posterior part usually more brownish than the anterior; disc distinctly punctured except calli and posterior margin; each lateral margin with a row of 16-25 submarginal setigerous punctures.

Scutellum of the same colour as pronotum, densely punctured, punctures either slightly larger than or of the same size as those on pronotum; anterolateral angles and sometimes also lateral parts of apex impunctate; the latter broadly rounded.

Corium yellow or yellowish brown, punctures and lines close to sutures brown; clavus with one complete and two partial rows of punctures; mesocorium with scattered punctures and with two rows of punctures paralleling clavo-corial suture; exocorium densely punctured; costa with 6-10 setigerous punctures; membrane hyaline, varying in length, slightly either shorter or longer than abdomen.

Propleuron polished, depression almost impunctate; evaporatoria and apex of peritreme as in fig. 266.

Sternites dark brown or brown, laterally with small punctures.

Legs pale brown, brown or dark brown, not specifically modified; tarsi yellowish brown.

Paramere as in fig. 267.

Measurements (male and female respectively): body length 3.61-4.22, 3.53-4.27; body width 2.22-2.66, 2.19-2.63; head length 0.71-0.79, 0.67-0.91; head width 1.00-1.16, 0.95-1.08; pronotum length 1.22-1.54, 1.10-1.39; pronotum width 2.10-2.35, 2.07-2.52; scutellum length 1.36-1.68, 1.36-1.76; scutellum width 1.46-1.72, 1.34-1.75; antennal segments: 0.21-0.22 : 0.12-0.21 : 0.22-0.24 : 0.22-0.27 : 0.28-0.29, 0.18-0.21 : 0.14-0.21 : 0.19-0.24 : 0.25-0.26 : 0.22-0.28.

**TYPE MATERIAL EXAMINED**

Lectotype female of *Cydnus tanna* DISTANT (designated by LIS, 1991b: 179): [INDIA]: Bombay, DIXON; DISTANT Coll. 1911-383; Type; *Cydnus tanna* DIST., Type; Brit. Mus. Type No. Hem. 292, Lectotype det. J.A. LIS 1990 (BMNH).

Paralectotype female: [INDIA]: Bombay, DIXON; DISTANT Coll. 1911-383; Paratype; *Cydnus tanna* DIST. (BMNH).

**OTHER MATERIAL EXAMINED (7 males, 10 females)**

NEPAL: Pokhara, 3,000ft, 1 female 12 IV 1954, J. QUINLAN, B.M. Nepal Expdt., B.M. 1954-540 (BMNH); Amiekhgani, Therai, Nepal, 1 male 1 female 7.-10.10.72, Ig. H. FRANZ, Collection E. HEISS, Innsbruck (EHC, JAL); Barahbise geg., Ting-Sang-La, Nepal, 1 male, Ig. H. FRANZ, ex coll. E. HEISS Innsbruck (JAL); Ghokarna b. Kathmandu, Nepal, 1 male, Ig. H. FRANZ, Collection E. HEISS, Innsbruck (EHC); 200 Kathmandu -Tal: Ganabahal u. Baneshwar, 1350m, 1 male 17.-20. Jul 1980, Kulturland, MARTENS & SCHAWALLER leg.



(JMC).

INDIA: India, 2 females II 1919, W. GHANTS, Brit. Mus. 1978-16 (BMNH, JAL); Bandra, India, 1 male, Dr. JAYAKAR, 1905-152 (JAL); Bombay, 1 female 1 male, G. LEWIS, B.M. 1926-369 (BMNH, JAL); Inde, Bihar, Raxaul, 1 female 24 X 1965, leg. Y. DOMALAIN, coll. R.I.Sc.N.B. (IRSNB); Ranchi, Irvine, 1 female, DISTANT coll., B.M. 1911-383 (BMNH); South India, S. Coorg. Ammatti, 1 male V 1951, 3100ft, P.S. NATHAN (JAL); Jubbulpore et env., Indes Anglaises (Prov. Centr.), 1 female Avril 1914, Muséum Paris (MNHN).  
 BURMA: Tenasserim, Kawkalet, 1 female, FEA, Gen. Febr. 1887 (JAL).  
 LAOS: Laos, Vientian, 2 females 15.I.986, 1 female 27.I.-1.II.986, at light, KABAKOV (ZIP, JAL).

DISTRIBUTION. - India, Nepal, Burma, Laos, Thailand.

### ***Aethus yunnanus* Hsiao**

*Aethus yunnanus* HSIAO in HSIAO et al., 1977: 44 & 296.

DIAGNOSIS. - The body length exceeding 5.6 mm (7.8-8.0), the clypeus subapically with two conspicuous peg-like setae, and the costa with 1-3 setigerous punctures will mark this species as distinct within the genus.

DESCRIPTION. - Head black, clypeus impunctate, apically with two conspicuous peg-like setae; each paraclypeus distinctly punctured and wrinkled, submarginally with a row of 7 peg-like setae and 3 hair-like setae; antennae brown, with the 2nd segment shortest, the remaining segments of the same length; rostrum brown.

Pronotum black, margins brownish; disc densely punctured, calli impunctate; each lateral margin with 14 setigerous punctures. Scutellum black. Corium black, densely punctured; costa with 1-3 setigerous punctures; membrane small and black.

Propleuron brownish black, depression with a few punctures. Legs brown.

Measurements: body length 7.8-8.0; body width 4.2-4.4; head length 0.9; head width 2.0; pronotum length 2.4; antennal length: 2.3.

DISTRIBUTION. - South China (Yunnan, Guizhou).

REMARKS. - Species unknown to me in nature; unfortunately, I was not able to study its type (my numerous requests for the loan of material from the Academia Sinica remained unanswered). The present description is based on the original HSIAO's description (HSIAO et al., 1977).

### **Genus *Alonips* SIGNORET, restored status**

*Alonips* SIGNORET, 1881a: 653.

*Geotomus* (*Alonips*): SIGNORET, 1883d: 216.

DIAGNOSIS. - The genus is best diagnosed by the terminal part of the peritreme modified into lobe-like auricle, by very small evaporatoria on meso- and metapleuron (just outlining peritreme and sometimes almost indistinct), by the lateral area of meso- and metapleuron coarsely punctured and usually with oblique furrows, and by the submargins of paraclypei bearing either only hair-like setae or hair-like setae and one pair of peg-like setae.

DESCRIPTION. - Head semicircular, broader than long; clypeus free, as long as paraclypei, subapically with a pair of hair-like setae (sometimes replaced by a pair



of peg-like setae in aberrant specimens); each paraclypeus with a submarginal row of setigerous punctures bearing either only hair-like setae or hair-like setae and one peg-like seta in a row (figs. 275, 279); eyes broad, each with apical spine; ocelli present; antennae 5-segmented.

Pronotum broader than long, undivided into lobes; lateral margins curved, the anterior angularly more or less insinuated, the posterior almost straight; umbones slightly swollen, but not covering posterolateral margins; disc with anterior, lateral and postmedian part punctured, calli and sometimes posterior margin impunctate or with fine puncturation; each lateral margin with a submarginal row of setigerous punctures bearing hair-like setae.

Scutellum longer than broad, elongately triangular, apex rounded; disc more or less punctured, basal and lateral rows of punctures distinctly developed.

Corium divided into clavus, meso- and exocorium, distinctly punctured; mesocorium with two rows of punctures paralleling clavo-corial suture; costal margins basally parallel, without setigerous punctures; membranal suture straight.

Anterior and posterior convexity of propleuron distinctly developed, depression with more or less visible punctures; evaporative area on meso- and metapleuron very small, just outlining peritreme, sometimes almost invisible, lateral areas coarsely punctured and usually with oblique furrows, apex of peritreme modified into lobe-like auricle (figs. 269, 272, 277).

Abdomen glossy in the middle, sides rugosely punctured.

Anterior tibiae compressed and expanded, margins with stout spines; middle and posterior tibiae slender, spined on margins.

Genitalia of the geotomine type.

TYPE OF GENUS. - *Alonips obsoletus* SIGNORET, 1881, subsequent designation by CHINA, 1943.

REMARKS. - The genus was described by SIGNORET (1881a) for the two Australian species - *A. obsoletus* SIGN. and *A. pilitylus* SIGN.; subsequently it was treated by the same author as a subgenus of *Geotomus* (SIGNORET, 1883d). Nevertheless, *A. obsoletus* SIGN. (the type-species of *Alonips* SIGNORET) is with no doubt not congeneric with *G. punctulatus* COSTA (the type-species of *Geotomus* MULSANT & REY), and therefore the original generic status of *Alonips* is herein restored.

At present the genus contains two Australian species (*A. obsoletus* SIGN., *A. pilitylus* SIGN.), six Oriental species (among them two new to the science), and the four African species previously erroneously placed in the genus *Geotomus* (LINNAVUORI, 1993), namely *A. intrusus* (E. WAGNER) **n. comb.**, *A. parallelus* (MANCINI) **n. comb.**, *A. rugosulus* (SIGNORET) **n. comb.**, and *A. orientalis* (JEANNEL) **n. comb.**

#### Key to species of *Alonips*

1. Body elongate, more parallel-sided, 1.85-2.00 times longer than broad ..... 2.
- Body ovate, 1.60-1.83 times longer than broad ..... 3.
2. Scutellum punctured with large punctures only, general puncturation moderately dense; paramere as in fig. 273 ..... *apicalis* (p. 158)
- Scutellum punctured with both large and small punctures, general puncturation very dense; paramere as in fig. 274 ..... *microevaporatorius* (p. 160)
3. Submargins of paraclypei with hair-like setae only, peg-like setae absent (figs. 268) ... 4.

- Submargins of paraclypei with hair-like setae and one pair of peg-like setae (figs. 275, 279) ..... 5.
- 4. Eyes larger, ocular index 2.6-3.2; body 1.65-1.80 times longer than broad; basal third of scutellum impunctate (fig. 268); paramere as in fig. 270 ..... **acrostictus** (p. 156)
- Eyes smaller, ocular index 4.8-5.0; body 1.60-1.65 times longer than broad; basal third of scutellum moderately punctured (as in fig. 271; paramere as in fig. 278) ..... **subrotundus** (p. 162)
- 5. Each paraclypeus with 2 submarginal setae (1 hair-like, and 1 peg-like) (fig. 275); paramere as in fig. 276 ..... **mirabilis** (p. 161)
- Each paraclypeus with 4-5 submarginal setae (3-4 hair-like, and 1 peg-like) (fig. 279); paramere as in fig. 280 ..... **taiwanicus** (p. 162)

***Alonips acrostictus* (Distant), new combination**  
(figs. 268-270)

*Geotomus acrostictus* DISTANT, 1918: 118; MOIZUDDIN & AHMAD, 1990: 318; LIS, 1991b: 180.

*Geotomus minor* HSIAO in HSIAO et al., 1977: 47 & 296, **new synonym**.

*Geotomus pygmaeus*, not of DALLAS: AHMAD et al., 1979: 15 & 18; MOIZUDDIN & AHMAD, 1990: 323.

**DIAGNOSIS.** - The ovate body, 1.66-1.80 times as long as broad, the large eyes with the ocular index ranging from 2.6 to 3.2, and the impunctate basal third of the pronotum separate this species from other members of the genus.

**DESCRIPTION.** - Body ovate, from dark castaneous to blackish brown, scutellum usually darker than pronotum and scutellum.

Head weakly or moderately punctured; clypeus as long as or only slightly longer than paraclypei, impunctate except for two subapical setigerous punctures; each paraclypeus with a row of 5 submarginal hair-like setae (fig. 268); eyes brown or blackish brown, ocular index 2.60-3.20; ocelli reddish brown, interocellar index 10.0-18.0; antennae brown or dark brown, segments apically paler; rostrum brown or dark brown, reaching middle coxae.

Pronotal disc punctured distinctly only in lateral parts (fig. 268), punctures slightly larger than those on head; anterior and posterior margin almost impunctate, the anterior distinctly angularly insinuated, the posterior almost straight; each lateral margin with a row of 6-8 submarginal setigerous punctures.

Scutellum punctured, except for basal third and apex (fig. 268); the latter rounded and slightly wrinkled.

Corium distinctly punctured, punctures larger than those on pronotum and scutellum; clavus with one complete and two partial rows of punctures; mesocorium sparsely and almost evenly punctured, two rows of punctures parallel clavo-corial suture; exocorium weakly punctured; costa without setigerous punctures; membrane from milky brown to brown, slightly surpassing the posterior extremity of abdomen.

Propleuron with punctures in depression; evaporative areas on both meso- and metapleuron very small, sometimes almost invisible, peritreme short, lateral area of mesopleuron with oblique furrows, that of metapleuron with numerous large deep punctures (fig. 269).

Sternites laterally densely and coarsely punctured.

Legs not specifically modified.

Paramere as in fig. 270.

Measurements (male and female respectively): body length 3.32-3.86, 3.00-3.59; body width 1.90-2.15, 1.80-2.01; head length 0.60-0.68, 0.53-0.62; head width 0.84-1.01, 0.82-0.89; pronotum length 1.06-1.18, 0.83-1.04; pronotum width 1.81-2.08, 1.71-1.94; scutellum length 1.35-1.64, 1.32-1.50; scutellum width 1.18-1.34, 1.11-1.27; antennal segments: 0.18-0.26 : 0.18-0.28 : 0.20-0.29 : 0.26-0.35 : 0.31-0.38, 0.20-0.22 : 0.21-0.24 : 0.19-0.26 : 0.25-0.31 : 0.31-0.34.

#### TYPE MATERIAL EXAMINED

Lectotype female of *Geotomus acrostictus* DISTANT (designated by LIS, 1991b: 180): [INDIA]: S. India, A.E. BUTLER, 1915-60; Chikkaballapura, S. India, T.V.C.; P; Type; *Geotomus acrostictus* DIST., Type; Brit Mus. Type No. Hem. 329; Lectotype det. J.A. LIS 1989 (BMNH).

Paralectotypes of *Geotomus acrostictus* DISTANT: 1 female: [INDIA]: Paratype; Chikkaballapura, S. India, T.V.C.; P9; S. India, E.A. BUTLER 1915-60 (BMNH); 1 female: [INDIA]: Paratype; Mysore State, S. India, T.V.C.; S. India, E.A. BUTLER 1915-60 (BMNH).

Holotype male of *Geotomus minor* HSIAO: [CHINA]: Hainan Is. (Mt. Tian-fen), 1964.V.3; Holotype; *Geotomus minor* HSIAO, 1974; 1964.V.3. (DBNU).

#### OTHER MATERIAL EXAMINED (25 males, 38 females)

PAKISTAN: Kurrachee, Aout-Sept., 1 male, MAINDRON, 133-96 (JAL); Karachi, 1 female 20-6-1975, on light, coll. M. ASLAM, det. as *Geotomus pygmaeus* DALL. by MOIZ. & AHM. (NHMUK); Karachi, 1 female 25-10-1976, on light, coll. MOIZUDDIN, det. as *Geotomus pygmaeus* DALL. (NHMUK).

INDIA: Coimbatore, Madras St., 1400', 8 females 2 males IX 1972, 3 males 4 females X 1972, P.S. NATHAN (CWS, JAL); Coimbatore, Madras St., 1400 ft., 1 female IV-1962, P. SUSAI NATHAN, Museum Leiden (RNH); Coimbatore, Madras St., 1400 ft., 1 female II.1973, T.R.S. NATHAN (NSMT); Deccan, Kurduvadi, 1 male (IRSNB); Cachemire, Koty, 1 male Juin 1914, G. BABAUT, Muséum Paris (MNHN); Mascale, Sept.-Oct., 1 male, MAINDRON, 133-96, Muséum Paris (MNHN); Moti-Nala et env., Indes Anglaises (Prov. Centr.), 1 female 1 male Avril 1914, G. BABAUT, Muséum Paris (MNHN); Chikkaballapura, S. India, T.V. CAMPBELL, ex coll. E. BUTLER: 1 male ?syntype (ZIP), 1 female B.M. 1926-171 (BMNH); Environs de Mahé (Cote de Malabar), Chasseurs indigènes, 1 male 2 semestre 1902, Muséum Paris, M. MAINDRON 1905 (MNHN); Inde, Mahé, 1 female, det. as *Cydnus bengalensis* LETH.? by WE-I YANG 1935 (MNHN); India Or., 1 male, STAUDINGER & BANG-HAAS (ZIP); Kairhana, Assam, 1 male 2.III.12, von. KIK (JAL); Katihar, Purneah District, N. Bengal, 1 male 13-X-07, C.A. PAIVA (JAL); S.E. Asia, India, Bengal, Singarbil, Tripura State, N.E. of Argataia, 1 male 16-22.IX.1945, D.A. TIDMAN, B.M. 1945-99 (BMNH); Nagpur, 1 female, ATKINSON (JAL); India, Dehra Dun, 1 female, G. ROGERS, 1906-202 (BMNH); India, Dacca, 1 female 13.VII.1945, D. LESTON, B.M. 1945-86, det. as *Geotomus pygmaeus* DALL. by D. LESTON (BMNH); Mysore, Chikkaballapur, 2 females January 1915, T.V. CAMPBELL coll. (BMNH, JAL); Fyzabad, 1 female, Unit. Prov. India, R.W.G. HINGSTON, B.M. 1922-293 (BMNH); Chipurupalli, Vizagapatam Dist., India, 1 female, R.S. PATUCK, B.M. 1924-7 (BMNH); India, Pilani (Rajasthan), 1 female 8.VIII.1959, B.M. 1959-500 (BMNH); South India, Madras State, Coimbatore, 1400ft, 1 female XI-1966, P.S. NATHAN (ZMA); South India, Pondicherry State, Karikal, 1 female I-1967, P.S. NATHAN (ZMA).

BURMA: Mandalay, O. Burma, N.A., 1 female 1.III.08 (BMNH); Birmania, Sheninaga, 1 male, FEA VI.1885, Birma, Leonardo FEA leg., vend. 1.I.1895, det. as *Geotomus birmanus* BREDD. by G. BREDDIN (ZIZM).

SRI LANKA: Ceylan, 1 male VI 1889, H. FRUHSTORFER (IRSNB); Ceylan, Kandy, 1 male, Coll. Clesse de BÉARIN 1909, Croisière du "Nirvana", E. CORDIER 1908, Muséum Paris (MNHN).

LAOS: Vientian, 1 female 20-23.I.968, at light, KABAKOV (ZIP).

VIETNAM: Tonkin, Son-Tai, 1 male, Muséum Paris, coll. NOULHIER 1898 (MNHN); Hué, 2 females, det. as *Cydnus varians* FAB. (MNHN); Tonkin Central, 1 female 1 male Avril, A. KREMPF 1911, Muséum Paris (MNHN); Cochinchine, Saigon, 1 female 15-V.1923, R. Vitalis DE SALVAZA (RNH).

THAILAND: Thailand, Phuket, Patong Beach, 2 males 2 females 5-9.III.1986, op licht, T. & M. SIMON THOMAS (ZMA, JAL); Thailand, Botanic. Gard., Sarabri Prov., 2 males 1 female 23.Mar.1982, K. SUGIYAMA (NSMT, JAL).

DISTRIBUTION. - Pakistan, India, Sri Lanka, Burma, South China (Hainan), Laos, Thailand, Vietnam.

REMARKS. - The specimen housed in ZIP and labelled "?syntype" did not belong to the original type series.

***Alonips apicalis* (DALLAS), new combination**

(figs. 271-273)

*Aethus apicalis* DALLAS, 1851: 120; WALKER, 1867: 158; STÅL, 1876: 26; KIRBY, 1891: 81; LETHIERRY & SEVERIN, 1893: 81.*Geotomus apicalis*: DISTANT, 1899a: 222, 1902: 99; KUMAR, 1962: 45, 50, 53; MOIZUDDIN & AHMAD, 1990: 318; LIS, 1991b: 181.*Geotomus* (*Anolips*) [sic!] *abdominalis* SIGNORET, 1883d: 219, **new synonym**.*Geotomus abdominalis*: ATKINSON, 1887: 57; LETHIERRY & SEVERIN, 1893: 71; DISTANT, 1902: 99; MOIZUDDIN & AHMAD, 1990: 317.*Geotomus elongatus*, not of HERRICH-SCHAEFFER: SIGNORET, 1883d: 212 [part].*Aethus oblongus*, not of RAMBUR: DOHRN, 1860: 400; KIRBY, 1891: 80.*Geotomus birmanus* BREDDIN, 1912: 97; DISTANT, 1918: 119, **new synonym**.

Misidentifications: HORVÁTH, 1879: 143; AHMAD &amp; MOIZUDDIN, 1977: 76.

**DIAGNOSIS.** - The elongated, almost parallel-sided body, about 1.85-2.00 times as long as broad, combined with the scutellum bearing large punctures only will separate this species from all others within the genus. The species is closely related to *A. microevaporatorius* from Pakistan, but can be easily distinguished from the latter by the shape of paramere and the general puncturation of the scutellum, as shown in the key.

**DESCRIPTION.** - Body elongate, almost parallel-sided (fig. 271), from dark castaneous to almost black, corium usually more brownish in shade.

Head dorsally distinctly punctured, except for posterior margin and apical part of clypeus; the latter as long as or slightly longer than paraclypei, subapically with two hair-like setae; each paraclypeus submarginally with a row of 4-5 hair-like setae; eyes dark brown or blackish brown, ocular index 2.60-3.40; ocelli reddish brown, interocellar index 11.0-15.0; antennae brown or dark brown, 1st and 5th segments sometimes entirely, and 3rd and 4th segments apically paler; rostrum brown or dark brown, reaching middle coxae.

Pronotum with distinct, usually dense puncturation (fig. 271); calli and posterior part of disc impunctate; each lateral margin with a row of 5-6 submarginal setigerous punctures.

Scutellum almost entirely densely punctured, punctures of the same size as those on pronotum, anterolateral angles smooth; apex elongated, and with tiny punctures.

Corium with punctures slightly larger than those on scutellum; clavus with one complete and two partial rows of punctures; mesocorium almost evenly punctured and with two rows of punctures paralleling clavo-corial suture; exocorium sparsely punctured; costa without setigerous punctures; membrane hyaline, slightly browned, varying in length.

Propleuron with coarse punctures in depression; evaporative areas on meso- and metapleuron very small, peritreme longer than that of *A. acrostictus*, lateral areas with numerous deep punctures, sometimes also with conspicuous oblique furrows (fig. 272).

Sternites laterally with distinct coarse puncturation.

Legs not specifically modified.

Paramere as in fig. 273.

Measurements (male and female respectively): body length 3.70-4.15, 3.90-4.51; body width 1.95-2.12, 2.00-2.36; head length 0.67-0.77, 0.63-0.67; head width 0.93-1.05, 1.05-1.06; pronotum length 0.93-1.24, 1.10-1.27; pronotum width 1.88-2.07, 1.95-2.30; scutellum length 1.50-1.63, 1.54-1.83; scutellum width

1.18-1.34, 1.37-1.54; antennal segments: 0.21-0.27 : 0.25-0.32 : 0.21-0.29 : 0.32-0.41 : 0.37-0.44, 0.19-0.27 : 0.29-0.33 : 0.24-0.26 : 0.36-0.41 : 0.42-0.49.

#### TYPE MATERIAL EXAMINED

Lectotype female of *Aethus apicalis* DALLAS (designated by LIS, 1991b: 181): [INDIA]: N. India 48134; Type; 65. *Aethus apicalis* DALLAS; a; Brit. Mus. Type No. Hem. 335; Lectotype det. J.A. LIS 1989 (BMNH).

Lectotype male of *Geotomus (Alonips) abdominalis* SIGNORET (present designation): [INDIA]: Indies, coll. SIGNORET; *abdominalis*. det. SIGNORET; Lectotype, *abdominalis* SIGN., labelled by R.C. FROESCHNER 59; Coll. Nat. Mus. Wien (NhMW).

Lectotype female of *Geotomus birmanus* BREDDIN (present designation): [BURMA]: Mandalay, Birmania, FEA VI 1885, Birma, Leonardo FEA leg., vend. 1.1.1895, *Geotomus birmanus* BREDD., Type, G. BREDDIN determ. (ZIZM).

#### OTHER MATERIAL EXAMINED (60 males, 94 females)

PAKISTAN: Pakistan, Ig. HEISS, Umg. Karachi, 1 female 22.-30.9.1972, det. as *Geotomus intrusus* EW. by SEIDENSTÜCKER, 1973 (EHC).

INDIA: Inde Or., 1 female, det. as *Cyrtomenus flavitarsis* FIEBER, n. sp. (MNHN); India orient, 1 male, det. as *abdominalis* by SIGNORET (HNHM); India or., Bombay, 1 female, det. as *Geotomus abdominalis* (HNHM); Bihar, Inde, Raxaul, 1 male 24 X 1965, Y. DOMALAIN (JAL); South India, Madras State, Coimbatore, 1400ft, 1 male 1 female X-1966, 15 males 32 females XI-1966, 4 males 9 females XII-1966, P.S. NATHAN (ZMA, JAL); Coimbatore, Madras St., 1400', 1 female IX 1972, P.S. NATHAN (CWS); Karumbagaram, Karikal Terr., 1 female VIII 1955, P.S. NATHAN (CWS), 1 male VII 1954, P.S. NATHAN (IRSNB); South India, Pondicherry State, Karikal, 2 females VIII-1969, P.S. NATHAN (ZMA); S. India, Karikal, 7 males 9 females VII-1959, P. Susai NATHAN (RNH, JAL); Konbir, Inde, 1 male 1891, ex coll. CANDEZE (IRSNB); S. India, Kerala State, Walayar Forests, 700 ft., 1 female X-1959, P. Susai NATHAN (RNH); Malabar, Walayar Forest, 100ft, 1 male X 1956, Réc. P.S. NATHAN (JAL); Mandla et env., Indes Anglaises (Prov. Centr.), 1 female Mai 1914, G. BABAUULT, Muséum Paris (MNHN); Pilam, 2 males 1967, Gift of S. GOEL, det. as *Aethus nigratus* FAB. (CWS, JAL); Pondichéry, 1 female 1881, 1 female 1902, M. MAINDRON, Muséum Paris (MNHN); Punjab, JALagar, Indes Angl., 1 female Avril 1914, G. BABAUULT, Muséum Paris (MNHN); Trichinopoly, Inde Mérid., 1 female, coll. NOUAILHIER 1898, Muséum Paris (MNHN); Calcutta, 4 males, ATKINSON Collection, Bought 1895 (HEC, JAL); S. India, Karnataka, Mudigere area, c. 900m, 2 females 1 male 2-10.XI.1977, Zool. Mus. Copenhagen Exp. (ZMC, JAL); Ranchi, 1 female 1 male, Irvine, DISTANT Coll., B.M. 1911-383 (BMNH, JAL); Nagpur, 2 males, ATKINSON, DISTANT Coll., B.M. 1911-383 (BMNH); India Coconada, 1 female 1 male, SIMSON, FRY Coll., 1905-100 (BMNH, JAL); Chipurupalle, Vizagapatam Distr., India, 1 female 1 male, R.S. PATUCK, B.M. 1923-430 (BMNH, JAL); Fyzabad, Unit. Prov., India, 1 female, R.W.G. HINGSTON, B.M. 1923-293 (BMNH); Bandra, India, 1 female, Dr. JAYAKAR 1905-152 (JAL); India, Dehra Dun, 1 female 26.V.1936, 2300ft, Major J.A. GRAHAM, B.M. 1936-547, 1 female IX 1932, H.G. CHAMPION, at light (BMNH, JAL); Madhupur, Bengal, 1 female 13-X-09, 1 female 19-IX-09, C. PAIVA, Ind. Mus., DISTANT Coll., B.M. 1911-383 (BMNH, JAL); Balighai near Puri, Orissa, 3 females 26-X-08, at light, Annandale, Ind. Mus., DISTANT Coll., B.M. 1911-383 (BMNH, JAL); Indien, Bengal, Lohardaga-Ranchi, 2 females, J. KONIETSKO leg. Eing. Nr. 32 1932 (ZIZM); Calcutta, 1 female, ATKINSON Coll. 92-3 (BMNH); New Delhi, lichtfang, 1 female, Ig. H. FRANZ, collection E. HEISS Innsbruck (EHC); Berrar, Ind. Or., 1 male, STAUDINGER and BANG-HAAS (ZIP); Madras Airport, India, 2 males V-1962, Museum Leiden, P. Susai NATHAN (RNH).

SRI LANKA: Ceylan S.P., Hambantota, 1 female 30.IV.08, Coll. T.B.F. (JAL); Oilpattu, Ceylon, 1 male 2 females 8.1.1979, PLOSSL, collection E. HEISS Innsbruck (EHC, JAL).

BURMA: Birmanie, Mandalay: 1 male VI 1885, FEA (IRSNB), 1 male, FEA VI 1885; topotypus (?syntypus), det. as *Geotomus birmanus* BREDD. (ZIP); Birmanie, Rangoon: 1 female, Don P. DUPUIS (IRSNB), 1 male, FEA 1887 (ZIP), 2 males 1 female FEA V.1885, Birma, Leonardo FEA leg., vend. 1.1.1895 (ZIZM); Palon, Pegú L. FEA VIII.IX.87: 1 male, topotypus (?syntypus), det. as *Geotomus birmanus* BREDD. by KERZHNER (ZIP), 1 female, 102, Birma, Leonardo FEA leg., vend. 1.1.1895 (ZIZM); Nieder-Burma, oberhalb Rangoon, am Unterl. d. Irawati, 1 female, H. SCHRADER leg. 1913, Dr. M. KNOTH ded., Eing. Nr. 126 1937 (ZIZM).

CAMBODIA: Phnom-Penh, 1 female 2 males, Muséum Paris (MNHN, JAL); Promtep, Cambodge, 1 male, Muséum Paris (MNHN).

THAILAND: Siam, Bangkok, 3 females, H. HILLMAN, B.M. 1928-343 (BMNH, JAL); Siam, Klong Ran, 1 male 20.M.26, at light, W.R.S. LADELL, Pres. by Imp. Bur. Ent., Brit. Mus. 1929-399 (BMNH).

SINGAPORE: Singapore, 1 female 2 males, XANTHUS, det. as *Geotomus abdominalis* (HNHM).

DISTRIBUTION. - South Pakistan, India, Sri Lanka, Burma, Cambodia, Thailand, Singapore.

Records from Japan and North China pertain to *Geotomus convexus* HSIAO.



***Alonips microevaporatorius* (MOIZUDDIN & AHMAD), new combination**  
(fig. 274)

*Geotomus microevaporatorius* AHMAD et al., 1979: 14, nomen nudum.

*Geotomus microevaporatorius* MOIZUDDIN & AHMAD, 1990: 319.

**DIAGNOSIS.** - This species can be separated from other members of the genus, except *A. apicalis*, in the elongated almost parallel-sided body, 1.85-2.00 times longer than broad. The species differs from *A. apicalis* mainly in the puncturation of the scutellar disc (only large punctures present, general puncturation moderately dense in *A. apicalis*; both large and small punctures present, general puncturation very dense in *A. microevaporatorius*), and in the shape of the paramere.

**DESCRIPTION.** - Body elongate, almost parallel-sided.

Head black, apex of clypeus brownish black; clypeus as long as paraclypei, weakly punctured, medially slightly transversely wrinkled, subapically with two setigerous punctures; each paraclypeus densely and coarsely punctured with exception of posterior part, the submargin with a row of 5 setigerous punctures; eyes yellowish brown, ocular index 3.1; ocelli of the same colour as eyes, interocellar index 8.5; antennae brown; rostrum brown, partially yellowish brown, reaching middle coxae.

Pronotum black, densely and coarsely punctured, punctures partly smaller than and partly of the same size as those on head; calli small, smooth and medially interrupted by punctures; each lateral margin with a row of 6-8 submarginal setigerous punctures.

Scutellum black; disc almost entirely densely coarsely punctured, with both small and large punctures; anterolateral angles smooth.

Corium with clavus and basal part of mesocorium black, exocorium and mesocorium in central part brownish black, entire surface almost evenly punctured; clavus with one complete and two partial rows of punctures, mesocorium with two complete rows of punctures paralleling clavo-corial suture; costa without setigerous punctures; membrane milky brown or yellowish brown, reaching the tip of abdomen.

Propleuron black, depression coarsely punctured; evaporative areas on meso- and metapleuron reduced, lateral areas with numerous deep joined punctures forming elongated furrows.

Sternites black, laterally with numerous large and deep punctures, medial parts with numerous smaller punctures; all punctures bear short hair-like bristles.

Legs dark castaneous, not specifically modified.

Paramere (fig. 274) somewhat similar to that of *A. acrostictus*.

Measurements: body length 4.68-4.90; body width 2.40-2.44; head length 0.72-0.88; head width 0.80-1.12; pronotum length 1.12-1.20; pronotum width 2.32-2.40; scutellum length 1.92-1.98; scutellum width 1.52-1.60; antennal segments: 0.26-0.28 : 0.32-0.36 : 0.32-0.36 : 0.44-0.48 : 0.48-0.52.

**TYPE MATERIAL EXAMINED**

Holotype male of *Geotomus microevaporatorius* MOIZUDDIN & AHMAD: [PAKISTAN]: Host. light, Loc. Karachi, Date: 9.10.76, Coll. Moiz.; *Geotomus microevaporatorius* MOIZUDDIN and AHMAD 1990; Holotype (NHMUK).

**DISTRIBUTION.** - Pakistan.

**BIOLOGICAL DATA.** - All known specimens were collected at light (AHMAD et al., 1979; MOIZUDDIN & AHMAD, 1990).



***Alonips mirabilis*, new species**

(figs. 275-276)

**DIAGNOSIS.** - This species differs from other members of the genus, except *A. taiwanicus*, in having one pair of submarginal hair-like setae on the paraclypei replaced by the pair of peg-like setae (fig. 275). It can be easily separated from *A. taiwanicus* by the shape of the paramere, and the number of submarginal setigerous punctures on each paraclypeus (2 in *A. mirabilis*, 4-5 in *A. taiwanicus*).

**DESCRIPTION.** - Body ovate, from dark castaneous to blackish brown.

Head, except for clypeus and posterior margin, with large punctures; clypeus subapically with two long hair-like setae, sometimes replaced by a pair of peg-like setae (fig. 275); each paraclypeus with two submarginal setigerous punctures (1 hair-like seta, 1 peg-like seta); eyes dark brown or blackish brown, ocular index 2.50-3.10; ocelli reddish brown, interocellar index 12.0-16.0; antennae dark brown or brown, 3rd, 4th and 5th segments apically slightly paler; rostrum brown or dark brown, reaching middle coxae.

Pronotum punctured especially in lateral parts, anterior margin with several punctures only, postmedian band of punctures narrow and interrupted medially; punctures of lateral parts evidently larger than those of head; calli large and slightly elevated; umbones slightly swollen; each lateral margin with a row of 3-4 submarginal setigerous punctures, and several short hair-like bristles.

Scutellum with distinct punctures of the same size as those on pronotum; basal fourth impunctate and slightly elevated; apex elongated, finely punctured, the extreme tip impunctate.

Corium with punctures larger than those on pronotum and scutellum; clavus with one complete and two partial rows of punctures; mesocorium with two rows of punctures paralleling clavo-corial suture, mesocorial disc with almost evenly scattered punctures; exocorium impunctate except for a row of punctures paralleling mesocorium; costa without setigerous punctures; membrane brown, only slightly surpassing the tip of abdomen.

Anterior convexity of propleuron somewhat alutaceous, depression with several punctures; evaporatoria typical of the genus.

Lateral parts of sternites distinctly coarsely punctured and transversely wrinkled.

Legs not specifically modified.

Paramere with two teeth on inner margin (fig. 276).

Measurements (male and female respectively): body length 3.24-3.44, 3.19-3.48; body width 1.90-1.91, 1.80-1.93; head length 0.56-0.60, 0.55-0.58; head width 0.88-0.90, 0.84-0.92; pronotum length 0.97-0.98, 0.95-1.02; pronotum width 1.85-1.86, 1.76-1.88; scutellum length 1.46-1.49, 1.41-1.49; scutellum width 1.19-1.20, 1.16-1.19; antennal segments 0.18-0.21 : 0.19-0.24 : 0.21-0.25 : 0.29-0.31 : 0.37-0.39, 0.19-0.23 : 0.23-0.24 : 0.22-0.25 : 0.28-0.29 : 0.35-0.36.

**TYPE MATERIAL EXAMINED**

Holotype male: [INDONESIA]: Java, Delanggoe, coll. Dr. D. MAC GILLAVRY (ZMA).

Paratypes: 4 females: [INDONESIA]: Java, Delanggoe, coll. Dr. D. MAC GILLAVRY (ZMA, JAL); 1 female: [INDONESIA]: Sumatra, Padang (JAL); 1 female: [MALAYSIA]: Sabah, Kinabalu Nat. Park, VIII 1982 (JAL); 1 male: [PHILIPPINES]: Matalangao, 150m, N. Palawan Is., 28.VIII.1985, By light trap, M. TOMOKUNI (NSMT).

**DISTRIBUTION.** - Indonesia (Java, Sumatra), Malaysia (North Borneo), Philippines (Palawan).

***Alonips subrotundus* (BREDDIN), new combination**  
(figs. 277-278)

*Geotomus subrotundus* BREDDIN, 1909: 264; DISTANT, 1918: 118; GAEDIKE, 1971: 100; LIS, 1991b: 184.

**DIAGNOSIS.** - This species is best diagnosed by the ovate body, about 1.6 times as long as broad, the small eyes with the ocular index ranging from 4.8 to 5.0, the weakly punctured basal part of scutellum, and the paramere as in fig. 278. The species is closely related to *A. acrostictus*, but can be easily separated from the latter by the characters given in the key.

**DESCRIPTION.** - Body ovate. Head black with distinct puncturation on paraclypei, clypeus and vertex smooth, impunctate; clypeus as long as paraclypei, subapically with two setigerous punctures; each paraclypeus submarginally with 2 hair-like setae; eyes brown, ocular index 4.80-5.00; ocelli small, reddish brown or brown, interocellar index 5.0-6.0; antennae brown, 4th and 5th segments spically light brown; rostrum brown, reaching posterior coxae.

Pronotum black, disc laterally distinctly punctured with large punctures, anteriorly and posteriorly with tiny distinctly separated punctures; each lateral margin with a row of 6 submarginal setigerous punctures.

Scutellum black or blackish brown, disc basally with weaker puncturation, anterolateral angles smooth, middle and distal part densely punctured (except the extremely tip).

Corium brown or blackish brown; basal part densely punctured with large punctures, apical part with weaker and finer puncturation; clavus with one complete and two partial rows of punctures; mesocorium with two rows of punctures paralleling clavo-corial suture; costa without setigerous punctures; membrane milky brown, semihyaline, not reaching the tip of abdomen.

Propleuron polished, brown or blackish brown, depression with a few punctures; evaporative area on mesopleuron small and rounded, that of metapleuron very small and almost invisible, peritreme short; lateral area of mesopleuron with a few punctures and several furrows, that of metapleuron with more deep punctures (fig. 277).

Sternites brown and polished, laterally slightly wrinkled and punctured.

Legs brown, not specifically modified. Paramere as in fig. 278.

Measurements (male and female respectively): body length 3.63, 3.56; body width 2.22, 2.19; head length 0.63, 0.68; head width 0.95, 0.95; pronotum length 1.09, 1.12; pronotum width 2.09, 2.09; scutellum length 1.61, 1.58; scutellum width 1.34, 1.39; antennal segments: 0.19 : 0.24 : 0.24 : 0.29 : 5th missing, 0.19 : 0.24 : 0.22 : 0.29 : 0.34.

**TYPE MATERIAL EXAMINED**

Lectotype female of *Geotomus subrotundus* BREDDIN (designated by GAEDIKE, 1971: 100): [SRI LANKA]: Bandarawella, Ceylon, HORN; *Geotomus subrotundus* BREDD., Type; Lectotypus; des. H. GAEDIKE 1968; DEI Eberswalde (DEI).

Paralectotype male: [SRI LANKA]: Bandarawella, Ceylon, HORN; *Geotomus subrotundus* BREDD.; coll. BREDDIN; Paralectotypus; des. H. GAEDIKE 1968; DEI Eberswalde (DEI).

**DISTRIBUTION.** - Sri Lanka.

***Alonips taiwanicus*, new species**  
(figs. 279-280)

**DIAGNOSIS.** - This new species differs from all members of the genus, except *A.*

*mirabilis*, in having one pair of submarginal hair-like setae on the paraclypei replaced by the pair of peg-like setae (fig. 279). It can be at once separated from *A. mirabilis* by the number of submarginal setigerous punctures on each paraclypeus (2 in *A. mirabilis*, 4-5 in *A. taiwanicus*), and by the shape of the paramere.

DESCRIPTION. - Body ovate, from dark castaneous to blackish brown.

Head dorsally distinctly punctured, except for clypeus and vertex; lateral parts of clypeus and paraclypei slightly wrinkled; clypeus as long as paraclypei, slightly tapering apicad, subapically with two hair-like setae; each paraclypeus with a row of 4-5 submarginal setigerous punctures (1 peg-like seta, 3-4 hair-like setae - fig. 279); eyes blackish brown, ocular index 3.0-3.5; ocelli reddish brown, interocellar index 11.0-14.0; antennae dark brown; rostrum dark brown, reaching middle of mesosternum.

Pronotum with puncturation similar to that of *A. mirabilis*, but slightly weaker, all punctures larger than those on head; each lateral margin with a row of 4-5 submarginal setigerous punctures.

Corium with puncturation as in *A. mirabilis*, but punctures somewhat larger than those of the latter; costa without setigerous punctures; membrane semihyaline, slightly browned, surpassing (male) or only reaching (female) the posterior extremity of abdomen.

Propleuron polished, depression with punctures; evaporatoria typical of the genus.

Sternites laterally with dense coarse puncturation.

Legs not specifically modified.

Paramere with one tooth on the inner margin (fig. 280).

Measurements (male and female respectively): body length 3.10-3.41, 3.22; body width 1.88-2.01, 1.93; head length 0.56-0.65, 0.60; head width 0.85-0.92, 0.89; pronotum length 1.02-1.05, 1.02; pronotum width 1.78-1.95, 1.83; scutellum length 1.27-1.40, 1.39; scutellum width 1.15-1.27, 1.17; antennal segments 0.16-0.21 : 0.17-0.20 : 0.21-0.24 : 0.27-0.28 : 5th missing, 0.18 : 0.21 : 0.21 : 0.27 : 0.32.

#### TYPE MATERIAL EXAMINED

Holotype male: [CHINA]: Formosa, Takao, ex coll. R. HOLYNSKI (JAL).

Paratypes: 1 male: [CHINA]: Fukien Prov., Amoy, 1922, S.F. Light (JAL); 1 female 1 male: [HONG KONG]: Hong Kong, J.J. WALKER, Feb.-May, 93.145, Pres. by Imp. Bur. Rnt., Brit. Mus. 1923-383, det. as *Geotomus minor* HSIAO by J.A. LIS (BMNH, JAL).

DISTRIBUTION. - South China (Fujian, Taiwan), Hong Kong.

### Genus *Byrsinus* FIEBER

*Byrsinus* FIEBER, 1860: 83.

*Cydnus* sg. *Psammozetes* MULSANT & REY, 1866: 18, syn. with *Byrsinus* by OSHANIN, 1906: 8.

*Putonisca* HORVÁTH, 1919: 235, syn. with *Byrsinus* by LIS, 1993b: 81.

*Cydnus* [part] of authors, nec FABRICIUS, 1803.

*Aethus* [part] of authors, nec DALLAS, 1851.

DIAGNOSIS. - The genus is best diagnosed by the set of following characters: the antennae short, 5-segmented; each paraclypeus with a submarginal row of setigerous punctures bearing both peg-like and hair-like setae; the apex of the peritreme modified into a lobe-like auricle (fig. 284); the evaporatoria on the meso-

and metapleuron small, sometimes indistinct (figs. 281, 284).

DESCRIPTION. - Head broader than long, lateral margins sometimes slightly turned down; clypeus free, thought sometimes shorter than and laterally covered by paraclypei, nevertheless paraclypei never joined in front of clypeus; the latter with a subapical pair of setigerous punctures (peg-like setae or hair-like setae), each paraclypeus with a submarginal row of setigerous punctures bearing two types of setae - peg-like setae (which may be either shorter or longer than the eye width) and hair-like setae (always distinctly longer than the first type); ocelli present; eyes not large, each apically with one setigerous puncture; antennae 5-segmented, short, 1st and 2nd segment cylindrical, 3rd, 4th and 5th almost rounded; rostrum 4-segmented, usually surpassing middle of mesosternum.

Pronotum broader than long, laterally with numerous more or less long hair-like setae; umbones swollen to a degree; anterior margin broadly concave.

Scutellum longer than broad, sometimes with long hair-like setae on disc; basal and lateral rows of punctures distinctly developed.

Corium divided into clavus, meso- and exocorium; clavus only slightly covered by scutellum, membranal margins almost straight; costa with numerous setigerous punctures bearing long setae, sometimes also punctures on clavus, meso- and exocorium with long hair-like setae; membrane normally developed, not reduced, usually surpassing the tip of abdomen.

Propleuron with distinct depression; evaporative area on mesopleuron very small, almost indistinct, sometimes absent, that of metapleuron better visible, but also very small (figs. 281, 284); apex of peritreme modified into lobe-like auricle, without tooth on the posterior margin (fig. 284); osteolar opening visible in ventral view.

Sternites either smooth or punctured, punctures bearing long hair-like setae, especially numerous in lateral parts.

Anterior tibiae distally expanded, outer margins with stout spines; dorsal side of posterior tibiae slightly flattened, and bearing neither spines nor setae; ventral side of posterior tibiae with numerous stout spines and setae.

Paramere with one or two teeth on inner margin, apically with numerous more or less long hairs, an additional long bunch of hairs is present in some species.

TYPE OF GENUS. - *Cydnus* (*Byrsinus*) *fossor* MULSANT & REY, 1866 (= *Byrsinus scarabaeoides* sensu FIEBER, 1861), subsequent designation by OSHANIN, 1912); of *Cydnus* sg. *Psammozetus*, *Cydnus albipennis* COSTA, 1853, by monotypy; of *Putonisca*, *Cydnus pallidus* PUTON, 1887, by original designation.

REMARKS. - The genus was redefined only recently (LIS, 1993b). At present three species have been recorded from the area under study, but only *B. varians* is the genuine Oriental species; the remaining two (*B. pallidus*, *B. pilosulus*) are Palaearctic elements penetrating into northern parts of the Oriental Region.

#### Key to species of *Byrsinus*

1. Body yellowish with two distinct brown patches on the pronotal disc . . . . . *pallidus* (p. 165)
- Body not as above . . . . . 2.
2. Clypeus subapically with a pair of long hair-like setae; paramere as in fig. 282 . . . . . *pilosulus* (p. 165)

- . Clypeus subapically with a pair of short peg-like setae; paramere as in fig. 285 .....  
 ..... **varians** (p. 166)

### ***Byrsinus pallidus* (PUTON)**

*Cydnus pallidus* PUTON, 1887: 298.

*Aethus pallidus*: LETHIERRY & SEVERIN, 1893: 67.

*Putonisca scutellaris* HORVATH, 1919: 236, syn. with *A. pallidus* by E. WAGNER, 1964: 94.

*Aethus bipunctatus* AHMAD, MOIZUDDIN & KHAN, 1979: 17, 21, fig.7, syn. with *B. pallidus* by LIS, 1993b: 89.

*Aethus bipunctatus* MOIZUDDIN & AHMAD, 1990: 313, syn. with *B. pallidus* by LIS, 1993b: 89.

*Byrsinus pallidus*: LIS, 1993b: 89.

**DIAGNOSIS.** - Among the species of the genus recorded from the Oriental Region this one can be at once recognized by the yellowish body bearing two distinct brown patches on the pronotal disc.

**DESCRIPTION.** - Body length 4.00-5.25 mm.

Head yellow, posterior part yellowish brown; entire dorsal surface sparsely and evenly punctured with colourless, almost indistinct punctures; clypeus slightly shorter than paraclypei, subapically with two hair-like setae; each paraclypeus submarginally with a row of 11-12 peg-like setae; eyes reddish brown, ocular index 3.00-4.00; ocelli red, interocellar index 10.0-12.0; antennae yellow, 2nd segment longer than the 3rd; rostrum yellow, short, reaching middle of mesosternum.

Pronotum yellow, margins yellowish brown; disc evenly punctured, punctures colourless; calli smooth, dark brown; each lateral margin with more than 20 submarginal setigerous punctures.

Scutellum yellow, anterolateral angles, basal and lateral margins yellowish brown; disc, except basal third, with brown punctures; apex broad.

Corium yellow, evenly punctured; punctures brown; costa with 16-40 setigerous punctures; membrane yellowish brown, surpassing the tip of abdomen.

Propleuron yellowish brown, polished and smooth; evaporative areas small, yellowish brown.

Sternites yellowish brown, polished, laterally with numerous yellowish hair-like setae.

Legs yellow, tibiae with dark brown spines, femora with long yellowish setae.

#### **TYPE MATERIAL EXAMINED**

Lectotype male of *Cydnus pallidus* PUTON (designated by LIS, 1993b: 89): [ALGERIA]: Biskra; *Cydnus pallidus* PUT., coll. PUTON; Muséum Paris, Coll. PUTON; *Cydnus pallidus* PUT., Lectotype, des. J.A. LIS (MNHN).

Holotype female of *Aethus bipunctatus* MOIZUDDIN & AHMAD: [PAKISTAN]: Host. light, Loc. Karachi, Date: 10.9.76, Coll. Moiz.; *Aethus bipunctatus* MOIZUDDIN & AHMAD 1990; Holotype (NHMUK).

**DISTRIBUTION.** - West Palaearctic species; the record from Pakistan is the easternmost known locality of this species.

### ***Byrsinus pilosulus* (KLUG)**

(figs. 281-282)

*Cydnus pilosulus* KLUG, 1845: [10]; SIGNORET, 1882d: 157.

*Aethus pilosulus*: DALLAS, 1851: 117; WALKER, 1867: 155; LETHIERRY & SEVERIN, 1893: 67.

*Aethus karachiensis* AHMAD, MOIZUDDIN & KHAN, 1979: 14, 17, nomen nudum.

*Aethus karachiensis* MOIZUDDIN & AHMAD, 1990: 315, syn. with *B. pilosulus* by LIS, 1993b: 90.

*Byrsinus pilosulus*: LIS, 1993b: 90.

**DIAGNOSIS.** - The pronotal disc uniformly coloured (from brown to dark brown) coupled with the subapical part of clypeus bearing a pair of long hair-like setae will separate this species from other representatives of the genus.

**DESCRIPTION.** - Body length 3.30-4.10 mm.

Head castaneous or dark brown, densely and evenly punctured, except clypeus and vertex; clypeus as long as or only slightly shorter than paraclypei, subapically with two long hair-like setae; each paraclypeus submarginally with a row of 6-9 peg-like setae and 2-7 hair-like setae; eyes blackish brown, ocular index 2.60-3.50; ocelli reddish brown or yellowish brown, interocellar index 8.0-10.0; antennae yellowish brown or brown; rostrum yellowish brown, reaching middle of mesosternum.

Pronotum brown, castaneous or dark brown, evenly punctured; calli smooth and impunctate; each lateral margin with 18-29 submarginal setigerous punctures.

Scutellum of the same colour as pronotum, densely and evenly punctured, except anterolateral angles and apex; punctures on disc of the same size as those on pronotum.

Corium yellowish brown or brown, exocorium always darker than mesocorium and clavus; clavus with one complete and two incomplete rows of punctures; two rows of distinct large punctures present between meso- and exocorium; costa with 11-25 setigerous punctures; membrane milky white, surpassing far the tip of abdomen.

Propleuron yellowish brown, depression with a row of few dark punctures; evaporatoria as in fig. 281.

Sternites brown, slightly wrinkled, laterally with single colourless punctures.

Legs brown, not specifically modified.

Paramere as in fig. 282.

#### TYPE MATERIAL EXAMINED

Holotype male of *Aethus karachiensis* MOIZUDDIN & AHMAD: [PAKISTAN]: Host. light, Loc. Karachi, Date: 5.11.74, Coll. ASLAM, MOIZ.; *Aethus karachiensis* MOIZUDDIN & AHMAD 1990: Holotype (NHMUK).

Paratypes of *Aethus karachiensis* MOIZUDDIN & AHMAD: 3 females and 1 sex unknown (tip of abdomen damaged): [PAKISTAN]: Shadab. M.V., Host. on light, Loc. K. [arachi] U[niversity] campus, Date: 8.8.68; *Aethus karachiensis* Paratype (NHMUK).

#### OTHER MATERIAL EXAMINED (1 male, 1 female)

PAKISTAN: West-Pakistan, Umg. Karachi, 1 male 20-30.10.1971, lg. HEISS, det. as *Aethus pilosulus* KLUG by SEIDENSTÜCKER, 1971 (EHC).

INDIA: India, [illegible handwriting], 1 female VI-43 (ZIP).

**DISTRIBUTION.** - West Palaearctic species, eastwards reaching Pakistan and North India.

### *Byrsinus varians* (FABRICIUS)

(figs. 283-285)

*Cydnius varians* FABRICIUS, 1803: 187; SCHIÖDTE, 1847: 451; STÅL, 1868: 18, 1876: 25; SIGNORET, 1882d: 155; ATKINSON, 1887: 50; DISTANT, 1899a: 220, 1902: 92; LETHIERRY & SEVERIN, 1893: 68; BREDDIN, 1909: 263; MAXWELL-LEFROY, 1909: 306; MAXWELL-LEFROY & HOWLETT, 1909: 674; PAIVA, 1918: 3, 1919: 351; TAKENOUCI & MURAMOTO, 1969: 4.

*Cydnius Varians*: WESTWOOD, 1837: 5.

*Cydnonus* [sic!] *variaus* [sic!]: TAKENOUCI & MURAMOTO, 1968: 14.

*Aethus varians*: STÅL, 1868: 6, 1869: 121; WALKER, 1873: 13; KIRBY, 1891: 80; HSIAO et al., 1977: 43; MOIZUDDIN & AHMAD, 1990: 313; LIS, 1991b: 179.

*Aethus cyrtomenoides* DOHRN, 1860: 400; WALKER, 1867: 158, 1868: 534; STÅL, 1876: 26; SIGNORET, 1883d: 216; syn. with *C. varians* by SIGNORET, 1882e: 155.



- Aethus discolor* WALKER, 1867: 161; LETHIERRY & SEVERIN, 1893: 81; syn. with *C. varians* by DISTANT, 1899a: 220.
- Aethus omicron* WALKER, 1868: 534; KIRBY, 1891: 81, syn. with *B. varians* by LIS, 1993b: 92.
- Aethus varians* [sic!]: HASEGAWA, 1962: 6; AHMAD et al., 1979: 14, 17.
- Cydnus nigrinus*, not of FABRICIUS: DISTANT, 1901a: 101 [part].
- Cydnus ater* DISTANT, 1918: 117; syn. with *A. varians* by LIS, 1991b: 179.
- Psamnozetes* [sic!] *ater*: ESAKI, 1959: 75; TOMOKUNI, 1979: 104.
- Aethus ater*: MOIZUDDIN & AHMAD, 1990: 312.
- Aethus laticollis orientalis* GHOURI, 1975: 227, syn. with *B. varians* by LIS, 1993b: 92.
- Aethus laticollis*, not of E. WAGNER: SANDHU & DEOL, 1976: 85.
- Byrsinus varians*: LIS, 1993b: 92

**DIAGNOSIS.** - The uniformly coloured pronotum (from light brown to blackish brown) coupled with the clypeus bearing a pair of short subapical peg-like setae will separate this species from the other two.

**DESCRIPTION.** - Body (fig. 283) from light brown to blackish brown.

Head dorsally wrinkled and finely sparsely punctured; clypeus as long as or slightly shorter than paraclypei, subapically with two peg-like setae; each paraclypeus with a row of 10-12 submarginal setigerous punctures (7-8 peg-like setae and 3-5 hair-like setae); eyes brown, ocular index 2.40-3.00; ocelli pale brown, interocellar index 8.0-13.0; antennae with 2nd segment shorter than the 3rd; rostrum reaching middle of mesosternum.

Pronotum with puncturation as in fig. 283; umbones swollen; each lateral margin with 19-40 submarginal setigerous punctures.

Scutellum distinctly and densely punctured, except basal part; lateral parts sometimes slightly wrinkled.

Corium densely punctured; clavus with one complete and two partial rows of punctures; mesocorium with two rows of punctures paralleling clavo-corial suture, the remaining area almost evenly punctured, with elongated smooth band close to exocorium; two rows of distinct punctures present between exo- and mesocorium; all punctures of the same size as those on scutellum; costa with 11-24 setigerous punctures; membrane hyaline, sometimes slightly browned, surpassing the tip of abdomen.

Propleuron with a few punctures in depression; evaporatoria as in fig. 284, evaporative areas small.

Sternites laterally coarsely punctured and wrinkled.

Legs not specifically modified.

Paramere as in fig. 285.

Measurements (male and female respectively): body length 3.40-4.46, 3.43-4.17; body width 2.12-2.68, 2.08-2.59; head length 0.59-0.67, 0.60-0.67; head width 1.01-1.18, 1.00-1.16; pronotum length 1.17-1.34, 1.05-1.24; pronotum width 2.01-2.54, 2.01-2.42; scutellum length 1.36-1.68, 1.32-1.61; scutellum width 1.29-1.61, 1.28-1.59; antennal segments: 0.16-0.25 : 0.10-0.17 : 0.17-0.21 : 0.15-0.21 : 0.21-0.23, 0.17-0.20 : 0.12-0.17 : 0.15-0.21 : 0.19-0.20 : 0.21-0.22.

#### TYPE MATERIAL EXAMINED

Lectotype male of *Cydnus varians* FABRICIUS (present designation): [INDIA]: Ind. or., DALDORFF, Mus. de Sestest, *Cydnus varians* F.; Type (ZMC).

Paralectotype female of *Cydnus varians* FABRICIUS: [INDIA]: Type (ZMC).

Lectotype female of *Aethus cyrtomenoides* DOHRN (present designation): [SRI LANKA]: Ceylon, NIETNER; Type; Mus. Zool. Polonicum, Warszawa 12/45; *Cydnus cyrtomenoides* DOHRN (IZPAS).

Lectotype female of *Aethus omicron* WALKER (present designation): [SRI LANKA]: Ceylon; Thwaites 67 25; *Aethus omicron* WALKER; Type; Brit. Mus. Type No. Hem. 333 (BMNH).

Lectotype female of *Cydnus ater* DISTANT (designated by LIS, 1991b: 179): [INDIA]: Chikkaballapura, S. India, T.V. CAMPBELL; S. India, E. A. BUTLER; Type; 855; *Cydnus ater* DIST., Type; Brit. Mus. Type No. Hem.

291; Lectotype det. J.A. Lis 1990 (BMNH).

Paralectotypes of *Cydnus ater* DISTANT: 1 female and 1 male; [INDIA]: Paratype; Chikkaballapura, S. India, T.V. CAMPBELL; *Cydnus ater* DIST.; ex. coll. E. BUTLER (BMNH); 1 female; [INDIA]: Nandidrug, S. India, T.V.C.; Paratype; S. India, E.A. BUTLER, 1915-60; *Cydnus ater* DIST. (BMNH).

Holotype male of *Aethus laticollis orientalis* GHOURI: [INDIA]: Type; Host Pearl Millet, Loc. Ludhiana, Date. sept. 71; C.I.E. Coll. A. 5252; Pres. by Com. Inst. Ent., B.M. 1972-2; *Aethus laticollis* WAG. *orientalis* ssp.n., M.S.K. GHOURI det. 1972 (BMNH).

Paratypes of *Aethus laticollis orientalis* GHOURI: 1 female and 2 males; [INDIA]: the same data as the holotype (BMNH).

#### OTHER MATERIAL EXAMINED (202 males, 188 females)

INDIA: Indes anglaises, Ajmer-Rajputana, 3 females 4 males, ex. coll. MULLER (IRSNB, JAL); Environs de Mahe, Cote de Malabar, Chasseurs indigenes, 5 males 4 females, 2 semestre 1902, Muséum Paris, M. MAINDRON (MNHN, JAL); Madras St., Coimbatore, 1400', 8 males 3 females IX 1972, P.S. NATHAN (CWS, JAL), South India, Coimbatore, 1 male I VII 13, FLETCHER coll., 2 males 19 IX 13, FLETCHER coll., at light, 1 male 25 II 13, A.C.R. coll., 1 female 27 XI 14, at light, insectary (BMNH, JAL); South India, Madras State, Coimbatore, 1400ft: 4 males 1 female XI. 1960, 12 males 7 females IV-1962, 40 males 53 females XI-1966, 1 male 8 female XII-1966, 6 males 9 females X-1966, P.S. NATHAN (ZMA, RNH, JAL); South India, Pondicherry State, Karikal, 1 male VIII-1965, P.S. NATHAN (ZMA); S. India, Karikal, Karumbagaram, 2 males 1955, P.S. NATHAN (CWS, JAL); Calcutta, 1 female, ATKINSON Collection, Bought 1895 (HEC), 1 male (BMNH); Mahe, 1 female, det. as *Cydnus varians* (MNHN); S. India, Karnataka, Tarikere area, c. 900m, 1 male 12-17.XI.1977, Zool. Mus. Copenhagen Exp. (ZMC); Bombay, 1 female 1 male, Coll. SIGNORET, det. as *variens* by SIGNORET (NhMW); Fyzabad, Unit. Prov., India, 3 females 2 males, R.W.G. HINGSTON, B.M. 1923-293 (BMNH, JAL); India, Behar, Pusa, 2 males 2 VII 1915, the Govt. Entomologist, Pres. by Imp. Bur. Ent., Brit. Mus., 1921-191, found carrying sizal seed (BMNH); Sarda, Bengal, F.W.C., 2 females, B.M. 1927-409 (BMNH); Sitapur, W. Almora, India, H.G.C., 4 females, CHAMPION Coll., B.M. 1927-409 (BMNH, JAL); W. Almora, Kumaon, V.P. India, H.G.C., 1 female, CHAMPION Coll., B.M. 1927-409 (BMNH); India, Nagpur, 1 female (JAL); Ludhiana, 5 females 11 males 1972, G.S. SANDHU, on bajra, C.I.E. A.5339 (BMNH, JAL); India, Punjab, Faridkot, 7 females 9 males 16.V.1969, on *Pennisetum typhoides*, C.I.E. A.5312 (BMNH, JAL); Bombay, Leith., 1 male, DISTANT coll., 1911-383 (BMNH); Sethumadai 20 km S.W. of Pollachi, 1 male 26-IV-37, S. India, B.M.-C.M. Expdn. to South India, April-May 1937 (BMNH); Chikkaballapura, India, 3 males, T.V. CAMPBELL, *Cydnus ater*, T.V. CAMPBELL Coll., B.M. 1930-599 (BMNH); Chipurupalli, Vizagapatam Dist., India, 1 male, R.S. PATUCK, B.M. 1924-7 (BMNH); India, 1 male, on *Sorghum* roots, R.R.S. MANDYA, 8.7.1973, det. as *Aethus ater* DIST. by M.S.K. GHOURI 1975 (BMNH); India, Jaipur, 1 male 3.VII.79, Bajra roots, C.I.E.A. 11584, det. as *Aethus laticollis orientalis* Gh. by M.S.K. GHOURI 1980 (BMNH); New Delhi, Lichtfang, 2 males 5 females, lg. H. FRANZ, Collection E. HEISS Innsbruck (EHC, JAL); N. Delhi, India, 3 males 3 females 19.VII.958 ALEKSANDROV, 1 male 6 females 17.VIII.951 E. IVANOV, 22.VII.958 4 females ALEKSANDROV (ZIP, JAL); S. India, Point Calimere, Madras St., 2 males 1 female X.1971, T.R.S. NATHAN (NSMT, JAL); Andaman Is., Port Blair, S. Andaman I., India, 1 male 16-V, 1982, H. DETANI (NSMT); India, Madras Airport, 6 males 11 females V-1962, P. SUSAI NATHAN, Museum Leiden (RNH, JAL); India, Thambikotai, 1 male 1 female VI-1962, P. SUSAI NATHAN, Museum Leiden (RNH); India, Madras State, Poonamalee, 1 male VI-1962, P. SUSAI NATHAN, Museum Leiden (RNH).

BURMA: Mandalay, Birmania, VI 1885, FEA: 2 female, det. as *Cydnus nigratus* FAB. by DISTANT, Museo Civico di Genova (MCSN), 1 female, det. as *Cydnus varians* F. by OSHANIN (ZIP), 1 female, 97, Leonardo Fealeg., Birma, vend. 1.I.1895 (ZIZM), 1 male, DISTANT Coll. 1911-383 (BMNH).

SRI LANKA: Puwakpitiya, Ceylan, 1 male, HIVER 1906-7, E. BUGNION, Muséum Paris, coll. BUGNION (MNHN); Ceylon, 1 female, FRY Coll. 1905-100 (BMNH); Peradeniya, Ceylon, 1 female 9.1902, DISTANT Coll. 1911-383 (BMNH).

CHINA: Namoal I., S.E. China, 2 females 1 male, J.J. WALKER (BMNH, JAL).

LAOS: Annam, Laos, 2 females 2 males, det. as *Microporus varians* (HNHM); Annam, Qui Nhon, 1 male, Muséum Paris, J.M. BEL 1897 (MNHN).

VIETNAM: Cochinchine, 2 females 2 males, O. GAMBEY, Muséum Paris, coll. FALLOU, det. as *Cydnus varians* (MNHN); Cochinch., 1 male VI 1882, PEST M., det. as *variens* (NhMW); Long Xuyen, Cochinchine, Dorr., 1 male, Muséum Paris, coll. E. FLEUTIAUX 1919 (MNHN); Tourane, 3 females 8 males, G.B., Muséum Paris (MNHN, JAL); Saigon, 3 females 5 males 9-11, Muséum Paris, coll. E. FLEUTIAUX 1919 (MNHN, JAL), 1 female 1 male, det. as *Cydnus varians* (MNHN), 1 female, 4620, det. as *Cydnus*, collection E. de BERGEVIN (MNHN); 1 male (IRSNB), 1 female 3 males, XANTHUS, det. as *variens* FABR. (HNHM); Tonkin, Cho-Ganh, 4 females 3 males, L. DUPORE (MNHN); Hue, 1 male, det. as *Cydnus varians* (MNHN); Hanoi, Hotel Kim lien, 1 female 1 male 28-31.V.1966, Exp. Gy. TOPAL, Nr.593, collected on lamp (HNHM); Hanoi, 40m, l'hotel, 3 females 7.VIII.1963, à la lumière, T. POCs (HNHM, JAL); Tonkin Central, Muséum Paris, 4 males 2 females, A. KREMPF 1911, det. as *Aethus* sp. (MNHN, JAL); Nha Trang, 13 males, Muséum Paris, A. KREMPF, det. as *Aethus* sp. (MNHN, JAL); Tonkin, Son-Tai, 1 female, Muséum Paris, coll. NOUALHIER 1898 (MNHN); N-Vietnam, Hanoi, 1 female 20-30.IV.1991, at light, leg. E. JENDEK 1991 (NhMW); Vietnam, prov. Kien Giang, isl. Tho Tu, 1 male 9.IV.1987, leg. A. PONOMARENKO (JAL); Vietnam, Gia Lai, Ankhe, 1 male 24.XI.1978, 700m, L. MEDVEDEV leg. (JAL); Vietnam, Ha Sonh-Binh, Hoa-Binh, 1 male 15-21.X.76, L. MEDVEDEV leg. (JAL).

THAILAND: Bangsaen, Thailand, 1 female Nov.16, 1968, M. SATO leg. (NSMT).

MALAYSIA: N. Borneo, Jesselton, 1 male 1962-3, J. BRAY, B.M. 1964-236 (BMNH).

BRUNEI: Brunei, Seria, 1 female V-VIII.1978, P.M. HAMMOND & J.E. MARSHALL, B.M. 1978-49 (BMNH).

INDONESIA: Sumatra, Perboeangan bij Medan, 1 female, Dr C.R.PFISTER, coll. Dr D. MAC GILLAVRY (ZMA).

MALDIVE ISLANDS: Maldive Isl., Gan Addu Atoll, W.W.A. PHILLIPS, 1 male 1.X.1958, at night indoors nr. lagoon, B.M. 1958-638, 1 female 1 male, B.M. 1959-41, 1 male 13.IV.1959, B.M. 1959-282, 1 female 7.X.1958, B.M. 1959-113 (BMNH, JAL); Malediven, Villigilli, 2 males 10 females 19 VII 79, HEISS (EHC).

CHAGOS ARCHIPELAGO: Chagos Arch., Diego Garcia, Camp Marcel, 1 female 10.IV.1971, at light, open coconut grove, A.M. HUTSON, B.M. 1971-346 (BMNH).

DISTRIBUTION. - India, Sri Lanka, Maldive Is, Chagos Archipelago, Bangladesh, Burma, SE China (Tianjin, Hainan, Inner Mongolia, Ningxia), Vietnam, Laos, Thailand, Cambodia, Sumatra, Borneo.

Recorded also from Japan (ESAKI, 1959; TOMOKUNI, 1979).

BIOLOGICAL DATA. - The species was reported as a serious pest of *Pennisetum typhoides* (BURM.) in India (GHAURI, 1975); also among the collected material above a dozen specimens have been recorded as collected on this plant. SANDHU & DEOL (1976) found this species underground on mesocotyl of young seedlings of *Triticum* and *Pennisetum*. MAXWELL-LEFROY & HOWLETT (1909) reported it as found on or in the soil. Numerous examined specimens have been collected at light. Two males were found carrying sizal seed, the other two on roots of bajra and *Sorghum*.

### Genus *Fromundiellus*, new genus

DIAGNOSIS. - This new genus belongs to the group of genera with the head bearing only hair-like setae in a submarginal row on each paraclypeus coupled with neither lobe-like nor kidney-like apex of peritreme. The genus is related to *Fromundus*, but representatives of the former differ from those of the latter in the shape of the peritremal apex (it bears the blunt process which is a part of the posterior ridge of the peritreme in *Fromundiellus*, while the process is sharp, tooth-like, being a part of the anterior ridge of peritreme in *Fromundus*).

DESCRIPTION. - Head semicircular, broader than long, dorsally punctured; clypeus as long as or slightly shorter than paraclypei, subapically without setigerous punctures; each paraclypeus with submarginal setigerous punctures bearing hair-like setae; eyes rounded, each with an apical spine; ocelli present; antennae 5-segmented.

Pronotum broader than long, narrowed anteriorly; disc distinctly punctured, calli distinctly developed; anterior margin angularly insinuated; umbones not swollen; each lateral margin with a submarginal row of setigerous punctures.

Scutellum longer than broad, distinctly punctured; basal and lateral rows of punctures distinct.

Corium divided into clavus, meso- and exocorium, distinctly punctured; clavus with rows of punctures; mesocorium with two rows of punctures paralleling clavo-corial suture; costa without or with a single setigerous puncture; membranal suture almost straight.

Propleuron with conspicuously developed anterior and posterior convexity; evaporative areas on meso- and metapleuron large, distinct; apex of peritreme neither lobe-like nor kidney-like, its posterior margin with a blunt process being a

part of the posterior ridge of peritreme (figs. 286, 288).

Sternites glossy in the middle, laterally punctured, sometimes also wrinkled.

Anterior tibiae expanded, margins with strong spines; middle and posterior tibiae slightly compressed, with spines on margins; femora with long and short setae on margins, each posterior femur with small subapical tooth on the ventral margin.

Male genitalia of the geotomine type; paramere stout, penis almost straight, subapically slightly thickened, apically recurved dorsad.

TYPE OF GENUS. - *Aethus maurus* DALLAS, 1851.

REMARKS. - At present the genus contains only two species previously wrongly placed within either *Aethus* or *Geotomus*.

#### Key to species of *Fromundiellus*

1. Costal margin with 1 setigerous puncture; each paraclypeus submarginally with a single preocular setigerous puncture; eyes large, ocular index 2.60-3.20; evaporative area on mesopleuron entirely dulled (fig. 286); paramere as in fig. 287 . . . . . *maurus* (p. 170)
- Costal margin without setigerous punctures; each paraclypeus submarginally with a row of 3-5 setigerous punctures; eyes small, ocular index 3.70-5.25; evaporative area on mesopleuron posteriorly with polished band (fig. 288); paramere as in fig. 289 . . . . . *peshawarensis* (p. 172)

#### *Fromundiellus maurus* (DALLAS), new combination (figs. 286-287)

*Aethus maurus* DALLAS, 1851: 118; DOHRN, 1859: 9; WALKER, 1867: 158 [part]; STÅL, 1876: 26; ATKINSON, 1887: 49; KIRBY, 1891: 81; MOIZUDDIN & AHMAD, 1990: 313.

*Cydnus indicus*, not of WESTWOOD: DISTANT, 1901a: 101.

*Cydnus maurus*: LETHIERRY & SEVERIN, 1893: 67; DISTANT, 1902: 92; TAKENOUCI & MURAMOTO, 1968: 4.

*Cydonus* [sic!] *maurus*: TAKENOUCI & MURAMOTO, 1968: 14.

*Geotomus maurus*: LIS, 1991b: 181.

*Geotomus yunnanus* HSIAO in HSIAO et al., 1977: 48 & 296, new synonym.

Misidentifications: WALKER, 1867: 158 [part]; BREDDIN, 1906: 10; LIS, 1991e: 310.

DIAGNOSIS. - The species differs from *F. peshawarensis* in several characters, namely in its costa bearing the single setigerous puncture, each paraclypeus with the single preocular submarginal setigerous puncture, in the large eyes with the ocular index ranging from 2.60 to 3.20, and in the evaporatorium on the mesopleuron posteriorly without a polished band (fig. 286).

DESCRIPTION. - Body from reddish brown to blackish brown.

Head dorsally punctured with exception of clypeus, vertex and lateral parts of paraclypei; clypeus as long as or slightly shorter than paraclypei, subapically without setigerous punctures; each paraclypeus with a single preocular setigerous puncture bearing hair-like setae; eyes brown or blackish brown, ocular index 2.60-3.20; ocelli reddish brown, interocellar index 5.0-9.0; antennae from brown to blackish brown; rostrum surpassing middle of mesosternum.

Pronotum densely punctured with exception of calli and posterior margin; each lateral margin with a row of 5-6 submarginal setigerous punctures.

Scutellum densely and evenly punctured, except for anterolateral angles and apex.

Corium densely punctured; clavus with one complete and two partial rows of punctures; mesocorium with two rows of punctures paralleling clavo-corial suture, mesocorial disc almost evenly punctured; exocorium with weaker puncturation; costa with 1 setigerous puncture; membrane hyaline, browned, surpassing the tip of abdomen.

Propleuron with numerous punctures in depression; evaporative area on mesopleuron entirely dulled (fig. 286).

Sternites glossy in the middle, laterally conspicuously wrinkled and densely punctured.

Legs not specifically modified.

Paramere as in fig. 287.

Measurements (male and female respectively): body length 5.85-6.55, 4.95-6.49; body width 2.85-3.39, 2.69-3.35; head length 1.01-1.09, 0.90-1.07; head width 1.30-1.58, 1.20-1.52; pronotum length 1.68-2.02, 1.58-1.98; pronotum width 2.90-3.29, 2.63-3.24; scutellum length 2.05-2.61, 1.98-2.44; scutellum width 1.90-2.15, 1.73-2.07; antennal segments: 0.26-0.28 : 0.36-0.40 : 0.37-0.39 : 0.42-0.53 : 0.56-0.63, 0.21-0.33 : 0.26-0.42 : 0.32-0.38 : 0.41-0.48 : 0.52-0.58.

#### TYPE MATERIAL EXAMINED

Lectotype male of *Aethus maurus* DALLAS (designated by LIS, 1991b: 181): [INDIA]: India; 233a; HARDWICKE Bequest; Type; *Aethus (Cydnus) maurus* DALLAS, Type; Brit. Mus. Type No. Hem. 296, Lectotype det. J.A. LIS 1990 (BMNH).

#### OTHER MATERIAL EXAMINED (8 males, 21 females)

INDIA: Gouhati, Assam, 1 female 24 V 957, ALEKSANDROV (ZIP); Jorhat, Assam, 1 female 24 V 957, 1 female 28 V 957, ALEKSANDROV (ZIP, JAL); India, Assam, Kazirahi reserv., 1 female 9-11.V.961, S.E. KORAVIN (ZIP).

NEPAL: Kathmandu-Tal, westlicher Teil, 1300-1400 m, 1 male 2 females 17-19. Feb. 1974 (JMC, JAL); C. Nepal, Balaju Water Garden, 1300 m, Kathmandu V., 2 females 8.IX.1981, Y. NISHIKAWA, NAT. SCI. MUS. (NSMT).

BURMA: Teinzo, Birmania, FEA, Maggio 1886: 2 females 1 male, Museo Civico di Genova, det. as *Cydnus indicus*, DISTANT det. (MCSN), 1 female, Birma, Leonardo FEA leg., vend. 1.I.1895 (ZIZM), 1 female, 179 (ZIP).

CHINA: San-nen-Kai, Yunnan-Fou, Yunnan (China), 3 males 1 female, E. le MOULT, Museum Leiden (RNH).

VIETNAM: Long Xuyem, Cochinchine, Dorr., 5 females 2 males, Muséum Paris, coll. E. FLEUTIAUX 1919 (MNHN, JAL); Tonkin, Cho Ganh, 1 male, L. DUPORE, Muséum Paris, coll. E. FLEUTIAUX 1919 (MNHN); Hanoi 35, Tonkin / 1937, 1 female, LE MOULT Vend., via REINBEK, Eing. Nr. 1 1957, Mus. Hamburg (ZIZM).

LAOS: Laos, Vientian, at light, 1 female 15.I.986, KABAKOV (ZIP).

CAMBODIA: Phnum-Penh, 1 female, Muséum Paris (MNHN).

DISTRIBUTION. - Nepal, India, Sri Lanka, Burma, South China (Yunnan), Laos, Vietnam, Cambodia.

The report from Sulawesi is based on the specimen wrongly identified by WALKER (1867); afterward this erroneous record was repeated by BREDDIN (1906) and LIS (1991e).

REMARKS. - The type material of *Geotomus yunnanus* HSIAO (preserved in the Peking Institute of Zoology, Academia Sinica) has not been examined (my requests for the loan of material remained unanswered). Nevertheless, the description of species, the figures of the pronotum and the evaporatoria (HSIAO et al., 1977), as well as the studied specimen from South China permit synonymization of *G. yunnanus* HSIAO, 1977 with *F. maurus* (DALLAS, 1851).



***Fromundiellus peshawarensis* (AHMAD, MOIZUDDIN & KHAN), new combination**  
(figs. 288-289)

*Macroscytus electus*, not of DISTANT: HOBERLANDT, 1960: 56, 1984: 72.

*Geotomus apicalis*, not of DISTANT: MOIZUDDIN & AHMAD, 1977: 76.

*Geotomus peshawarensis* AHMAD, MOIZUDDIN & KHAN, 1979: 18, 21, fig. 10.

*Geotomus peshawarensis* MOIZUDDIN & AHMAD, 1990: 322, objective synonym of *Geotomus peshawarensis* AHMAD, MOIZUDDIN & KHAN, 1979.

**DIAGNOSIS.** - The species differs from *F. maurus* in the following characters: the costa without setigerous punctures, each paraclypeus with a row of 3-5 submarginal hair-like setae, the eyes small with the ocular index ranging from 3.70 to 5.25, and the evaporatorium on the mesopleuron posteriorly with the polished band.

**DESCRIPTION.** - Body length 4.20-5.80; dorsum from blackish brown to black, corium usually more brownish than pronotum and scutellum; puncturation of dorsum weaker than that in *F. maurus*.

Head dorsally densely punctured with exception of clypeus and posterior fourth; clypeus slightly tapering apicad, as long as or somewhat shorter than paraclypei, subapically without setigerous punctures; each paraclypeus with a row of 3-5 submarginal setigerous punctures; eyes dark brown or blackish brown, ocular index 3.70-5.25; ocelli brown or blackish brown, interocellar 4.0-6.0; 3rd antennal segment as long as or only slightly longer than the 2nd; rostrum reaching middle of mesosternum.

Pronotum, except for calli and posterior margin; disc distinctly punctured, its lateral parts with puncturation more crowded than in the posterior half; each lateral margin with a row of 6-8 submarginal setigerous punctures.

Scutellum densely punctured with exception of anterolateral angles and apex; punctures of the same size as those of pronotum.

Corium densely punctured; clavus with one complete and two partial rows of punctures; mesocorium with two rows of punctures paralleling clavo-corial suture, mesocorial disc almost evenly punctured, its basal half with punctures of the same size as those of pronotum, while the apical with smaller punctures; exocorium with very dense puncturation; costa without setigerous punctures; membrane semihyaline, browned, surpassing the tip of abdomen.

Propleuron with numerous punctures in depression and on the posterior convexity; evaporative area on mesopleuron posteriorly with polished band (fig. 288).

Stermites smooth in the middle, laterally densely punctured, sometimes also wrinkled. Legs not specifically modified.

Paramere as in fig. 289.

**TYPE MATERIAL EXAMINED**

Holotype male of *Geotomus peshawarensis* MOIZUDDIN & AHMAD: [PAKISTAN]: Host., Loc. Peshawar, Date: 25.3.75, Coll. Moiz.; *Geotomus peshawarensis* MOIZUDDIN & AHMAD 1990; Holotype (NHMUK).

**OTHER MATERIAL EXAMINED (44 males, 60 females)**

EAST AFGHANISTAN: Haouz-Mahiyan (Kaboul), 1 male 4.4.58, Afghanistan (479), K. LINDBERG lgt., det. as *Macroscytus ?electus* DISTANT, KERZHNER det. 974 (LHC).

PAKISTAN: Chitral, 1 male VIII-1955, V. Birir, m. 2300, Dr. A. MARUSSI leg., Spedizione Italiana al Karakorum 954-55, 1955: Hindukush Or., Museo Civico di Trieste, det. as *Macroscytus electus* Dist. by L. HOBERLANDT 1958 (LHC); Muree, 1 male, det. as *Geonethus latiusculus* (HNHM); India, Muree, 1 female July 1943, D. LESTON, B.M. 1944-12 (BMNH); N.W. India, Muree Hills, Thobba, 1 female 1 male, Maj. Howland ROBERTS, B.M. 1926-395 (BMNH, JAL); Phagwari-Muree, 2 female 3 males 11.I.1983, Adults in debris under apple tree, C.I.C.C. Cod. 1/83-31, C.I.E. Coll., A 14907 (BMNH, JAL); Pakistan, Ig. Heiss, Umg. Quetta 1600 m, 1 male 2.-4.10.1972, det. as *Geotomus latiusculus* Hv. by SEIDENSTUCKER, 1973



(EHC).

NORTH INDIA: Bajaura (Kangra district), Indes Angl., 5 females 2 males Mai 1914, G.B., Muséum Paris (MNHN, JAL); Spiti, Gharri (Indes Angl.), 1 female Mai 1914, G. BABAULT, Muséum Paris (MNHN); Spiti, Mankaran (Indes Angl.), G. BABAULT, 3 females 1 male Mai 1914, Muséum Paris (MNHN, JAL); Spiti, Pulga (Indes Angl.), 9 females 6 males, G. BABAULT, Mai 1914, Muséum Paris (MNHN, JAL); Koty, Cachemire, 1 male, G. BABAULT, Juin 1914, Muséum Paris (MNHN); Cachemire, Poo, 2 females 2 males, Coll. R.I.Sc.N.B. (IRSNB, JAL); Poo, Kashmir, 3 females 2 males, det. as *Geotomus pygmaeus* DALL., O. STAUDINGER (ZIP, JAL); West-Himalaya, Poo bei Simla, 10 males 20 females, Cl. SPILCHAL ded. 28.XI.1913, det. as *Geotomus latiusculus* HORV. by E. WAGNER 1935 (ZIZM); India sept., Rampur, 1 male 22.V.1912, AVINOV and A. JACOBSON (ZIP); Kashmir, Srinagar, Zabarwon Hill, Pari Mahal, 1 female 4 males, leg. Gy. TOPAL, No. 394, singled material, 28.V.1967 (HNHM, JAL); Himalaya, C. Rost., Kulu, 1 male 7000ft, 1 female 5000ft, (HNHM); Kumaon, W. Almora, 2 females 1 male, India, H.G.C. CHAMPION, coll., B.M. 1927-409 (BMNH, JAL); Ranikhet, Kumaon, India, 3 females, H.G.C. CHAMPION coll., B.M. 1927-409 (BMNH, JAL); India, Punjab, Bhuin, 1 male 25.V.1943 (BMNH); Punjab, Manali, 1 female 14.V.1942, D. LESTON, B.M. 1944-12 (BMNH); Kashmir, Othing-Thang, 2 females, Expédition Fr. de l'Himalaya, Muséum Paris 1936, J. LÉNINGER, det. as *Geotomus* sp. (MNHN); val. de l'Indus, Tolti-Parkatta, 1 female, Expédition Fr. de l'Himalaya, Muséum Paris 1936, J. LÉNINGER, det. as *Geotomus* sp. (MNHN); val. de l'Indus, Bagicha, 1 female, 2480m, Expédition Fr. de l'Himalaya, Muséum Paris 1936, J. LÉNINGER, det. as *Geotomus* sp. (MNHN); Karghil, 2700m, 2 males, Expédition Fr. de l'Himalaya, Muséum Paris 1936, J. LÉNINGER, det. as *Geotomus* sp. (MNHN, JAL); India, U.P., Bhimtal nr Naini Tal, 1500m, 2 males 1 female 27-II-1978, F. SMETACEK (RNH).

DISTRIBUTION. - Most probably a species of the Palaearctic origin; at present the known distribution area is restricted to East Afghanistan, North Pakistan and North India.

BIOLOGICAL DATA. - Numerous specimens were collected under roots of grasses (AHMAD et al., 1979; MOIZUDDIN & AHMAD, 1990). Five specimens examined during the present study bear the label "Adults in debris under apple tree".

REMARKS. - *Geotomus peshawarensis* was treated as being in a manuscript and only listed in the paper of AHMAD et al. (1979); nevertheless the name of the species was supported by the figure of total habitus and the collecting data. According to the rules of the International Code of Zoological Nomenclature those items are sufficient for establishing a new species. Thus, *G. peshawarensis* was actually described by AHMAD, MOIZUDDIN & KHAN in 1979, and the name *G. peshawarensis* of MOIZUDDIN & AHMAD (1990) should be treated as the objective synonym of the former.

### Genus *Fromundus* DISTANT

*Fromundus* DISTANT, 1901b: 582.

*Brachysolen* HORVÁTH, 1919: 269, new synonym.

*Geotomus* [part] of authors, nec MULSANT & REY, 1866.

DIAGNOSIS. - The genus is best recognized among the cydnid genera with the 5-segmented antennae by the following characters: the head submarginally with hair-like setae on each paraclypeus; the anterior tibiae normally developed, not produced beyond the tarsal insertion; the middle and the posterior tibiae neither broadened nor compressed; the umbones of the pronotum not swollen; the costal margins not serrated; the apex of peritreme kidney-like, posteriorly with the tooth-like process being a part of the anterior ridge of the peritreme; the penis slender in outline.

DESCRIPTION. - General outline of the body as in the genus *Geotomus* (figs. 290, 296). Head broader than long, moderately to densely punctured; margins rounded, but not as broadly as in the genus *Aethoscytus*; clypeus usually as long as

paraclypei, subapically with or without a pair of hair-like setae; each paraclypeus with 1-7 submarginal setigerous punctures bearing hair-like setae; eyes from small to moderately large, each with the apical spine; ocelli present; antennae 5-segmented.

Pronotum broader than long, narrowed anteriorly, undivided into lobes; anterior margin deeply angularly insinuated; umbones not swollen; each lateral margin with a row of 4-7 submarginal setigerous punctures.

Scutellum longer than broad, disc distinctly punctured; basal and lateral rows of punctures clearly developed; apex tongue-like, usually elongated.

Corium divided into clavus, meso- and exocorium; clavus with rows of punctures; mesocorium with two rows of punctures paralleling clavo-corial suture, mesocorial disc almost evenly punctured; costa either without or with a single setigerous puncture; membranal suture almost straight, membrane varying in length, usually surpassing the tip of abdomen.

Propleuron with punctures in depression, sometimes also on anterior and posterior convexity; evaporative areas on meso- and metapleuron distinct, large; apex of peritreme kidney-like, posteriorly with tooth-like process being a part of the anterior ridge of peritreme (figs. 292, 297, 298, 302, 305).

Sternites usually with distinct puncturation, only occasionally impunctate (*F. impunctatus*).

Anterior tibiae expanded, not produced beyond the tarsal insertion, marginally with numerous spines and setae; middle and posterior tibiae neither broadened nor compressed; posterior femora usually with small subapical tooth on the dorsal margin.

Male genitalia of the geotomine type; penis slender in outline.

TYPE OF GENUS. - *Fromundus opacus* DISTANT, 1901, by monotypy; of *Brachysolen*, *Brachysolen opacus* HORVÁTH, 1919, by original designation.

REMARKS. - At present the genus includes seven Oriental species (among them two new to the science), and ten African (all of them previously wrongly placed in the genus *Geotomus* by LINNAVUORI, 1993), namely *F. picinus* (STAL, 1853) n. comb., *F. difficilis* (STAL, 1853) n. comb., *F. parcimonius* (SIGNORET, 1858) n. comb., *F. hirtipes* (PALISOT DE BEAUVOIS, 1805) n. comb., *F. theano* (LINNAVUORI, 1993) n. comb., *F. bicornis* (LINNAVUORI, 1993) n. comb., *F. glaber* (SIGNORET, 1858) n. comb., *F. montanus* (LINNAVUORI, 1993) n. comb., *F. rugicollis* (LINNAVUORI, 1993) n. comb., and *F. fraterculus* (LINNAVUORI, 1993) n. comb.

#### Key to species of *Fromundus*

1. Clypeus with a pair of subapical setigerous punctures bearing hair-like setae (fig. 304) . . . . . 2.
- Clypeus without subapical setigerous punctures (figs. 291, 295) . . . . . 3.
2. Eyes smaller, ocular index 4.00-4.82; costa flattened and broadened; paramere as in fig. 306 . . . . . *opacus* (p. 179)
- Eyes larger, ocular index 3.00-3.27; costa neither flattened nor broadened; paramere as in fig. 308 . . . . . *pseudopacus* (p. 180)
3. Smaller species, body length not exceeding 5.0 mm (3.00-4.50) . . . . . 4.
- Larger species, body length exceeding 5.0 mm (5.27-6.85) . . . . . 5.

4. Pronotum and scutellum opaque, puncturation very dense (fig. 301); paramere as in fig. 303 ..... *opacellus* (p. 178)
- Pronotum and scutellum shiny, puncturation weaker; paramere as in fig. 310 ..... *pygmaeus* (p. 181)
5. Costa without setigerous punctures; sternites either impunctate or with a few punctures laterally ..... *impunctatus* (p. 177)
- Costa with 1 setigerous punctures; sternites laterally densely punctured ..... 6.
6. Each paraclypeus with the single preocular hair-like seta (fig. 295); pronotum and scutellum very densely punctured (fig. 296); 3rd antennal segment 1.20-1.35 times longer than the 2nd; apical part of penis as in fig. 300; paramere as in fig. 299 ..... *flaviostris* (p. 176)
- Each paraclypeus with 2-3 submarginal hair-like setae (fig. 291); puncturation of pronotum and scutellum weaker (fig. 290); 3rd antennal segment 0.90-1.10 times as long as the 2nd; apical part of penis as in fig. 294; paramere as in fig. 293 ..... *biimpressus* (p. 175)

***Fromundus biimpressus* (HORVÁTH), new combination**

(figs. 290-294)

*Geocnethus biimpressus* HORVÁTH, 1919: 251.

*Geotomus oblongatus* HSIAO in HSIAO et al., 1977: 46 & 296, new synonym.

**DIAGNOSIS.** - The clypeus without subapical setigerous punctures, the body length exceeding 5.0 mm, the costa bearing a single setigerous puncture, the sternites laterally densely punctured, each paraclypeus with 2-3 submarginal setigerous punctures, both the pronotum and the scutellum moderately punctured, and the 3rd antennal segment about 0.90-1.10 times as long as the 2nd can easily separate this species from all others within the genus.

**DESCRIPTION.** - Body (fig. 290) from dark brown, through blackish brown to black.

Head laterally with distinct punctures (fig. 291); clypeus and vertex impunctate or with single punctures only; clypeus parallel-sided, as long as paraclypei and without subapical setigerous punctures; each paraclypeus with 2-3 submarginal setigerous punctures bearing hair-like setae; eyes dark brown or blackish brown, ocular index 2.00-2.70; ocelli blackish brown, interocellar index 7.0-11.0; 3rd antennal segment 0.90-1.10 times as long as the 2nd; rostrum reaching middle coxae.

Pronotum with the anterior margin deeply angularly insinuated; puncturation of disc as in fig. 290, posterior and lateral margins, as well as calli impunctate, the latter somewhat elevated; each lateral margin with a submarginal row of 4 setigerous punctures.

Scutellum basally impunctate, medially with dense puncturation; apex elongated, tongue-like, finely punctured.

Corium distinctly punctured, basally with large punctures, apically with the smaller; clavus with one complete and two partial rows of punctures; mesocorial disc almost evenly punctured, and with two rows of punctures paralleling clavo-corial suture; exocorium moderately punctured; costa with 1 setigerous puncture; membrane brown, varying in length and width, usually only reaching or sometimes slightly surpassing the tip of abdomen.

Propleuron distinctly punctured in depression and on the posterior convexity; evaporatoria as in fig. 292, meso- and metapleuron with lateral areas and lamella

distinctly punctured.

Sternites glossy in the middle, sides distinctly punctured.

Posterior femora subapically with conspicuously developed tooth on dorsal margin.

Paramere and apical part of penis as in figs. 293 & 294, respectively.

Measurements (male and female respectively): body length 5.27-5.67, 5.70-6.50; body width 2.83-3.02, 3.02-3.35; head length 0.93-1.01, 0.83-1.11; head width 1.24-1.40, 1.38-1.51; pronotum length 1.56-1.71, 1.56-1.90; pronotum width 2.73-2.90, 2.90-3.24; scutellum length 2.28-2.42, 2.37-2.80; scutellum width 1.78-1.88, 1.93-2.12; antennal segments: 0.28-0.33 : 0.38-0.42 : 0.42-0.43 : 0.61-0.63 : 0.69-0.73, 0.32-0.35 : 0.43-0.46 : 0.39-0.45 : 0.59-0.67 : 0.62-0.71.

#### TYPE MATERIAL EXAMINED

Lectotype female of *Geocnethus biimpressus* HORVÁTH (present designation): [LAOS]: Annam, Laos; *biimpressus* det. HORVÁTH; Lectotype *Geocnethus biimpressus* HORV., labelled by R.C. FROESCHNER 59 (HNHM).

Paralectotypes of *Geocnethus biimpressus* HORVÁTH: 3 females: [LAOS]: the same data as the holotype (HNHM).

Holotype female of *Geotomus oblongatus* HSIAO: [CHINA]: Kwangtung Prov. (Gao-yao: Mt. Ding-hu), 1962.IX.24; Holotype; *Geotomus oblongatus*, HSIAO, 1974 (DBNU).

#### OTHER MATERIAL EXAMINED (9 males, 12 females)

SOUTH CHINA: China, Fukien Prov., Amoy, 1 male 1922, S.F. Light, Pres. by Imp. Bur. Ent., Brit. Mus. 1923-383 (BMNH).

VIETNAM: Tonkin, reg. de Hoa-Binh, 1 female, A. de COOMAN 1928, Muséum Paris (MNHN); Prov. Nghe-An, foresteire Quy-châu, 200m, 1 female, a la lumiere, foret pluv. trop. semidecid., 28.VIII.1963, T. POCS (HNHM); Hanoi City, Ho Tay, 1 female, No.4, on light, 8.X.1986, leg. VÁSÁRHELYI (JAL); Vietnam, Hanoi, 1 female 14.X.1976, L. MEDVEDEV leg. (JAL); Tay Ninh, Cochinchina, 2 males 1 female Oct. 1923, E. le MOULT, Museum Leiden (RNH).

THAILAND: Siam, 1 female, W.R.S. LADELL (JAL); Siam, Bangkok, 1 male 15th April 1927, at light, W.R.S. LADELL, Pres. by Imp. Bur. Ent., Brit. Mus. 1929-399 (BMNH).

MALAYSIA: Malay Penin., 1 male, Ex Coll. Agr. Dept., Carrey Island, Feb. 2nd 1916, labelled at Sel. Mus. K.I., Ex F.M.S. Museum, B.M. 1955-354 (BMNH).

INDONESIA: Bindjei-Medan, Sumatra, 3 females 3 males, Dr. C.R. PFISTER, coll. Dr. D. MAC GILLAVRY (ZMA, JAL); Palembang, 1 female, G. WÖLBER leg. 1890, ded. 11.IX.1891 (ZIZM); Sumatra, 1 female (JAL); Deli, Sumatra, 1 female, Mus. Leiden, Verz. FOKKER (RNH); Indonesia, Sitingaulaut, alt. 1,000 m, 25 km east from Padang, Sumatera Barat, 1 male 21.VIII.1977, Shinji NAGAI leg. (NSMT).

DISTRIBUTION. - South China (Yunnan, Fujian, Guangdong), Vietnam, Laos, Thailand, Malaya, Sumatra.

### ***Fromundus flavirostris* (HORVÁTH), new combination**

(figs. 295-300)

*Geocnethus flavirostris* HORVÁTH, 1919: 252.

*Sehirus breviceps* HORVÁTH, 1919: 268, new synonym.

DIAGNOSIS. - The species is best diagnosed by the set of following characters: the clypeus subapically without setigerous punctures; each paraclypeus with the single preocular hair-like setae; the body length exceeding 5.0 mm; the costa with one setigerous puncture; the sternites with distinct dense puncturation laterally; the 3rd antennal segment 1.20-1.35 times longer than the 2nd; the pronotum and the scutellum with very dense puncturation.

DESCRIPTION. - Body (fig. 296) black, densely punctured with deep large punctures.

Head evenly punctured with exception of posterior part (fig. 295); clypeus as long as or slightly longer than paraclypei, without subapical setigerous punctures;

each paraclypeus with a single preocular hair-like seta; eyes blackish brown, ocular index 2.00-2.30; ocelli brown or reddish brown, interocellar index 5.0-8.0; antennae brown or blackish brown, 3rd segment 1.20-1.35 times longer than the 2nd; rostrum blackish brown or brown, reaching or surpassing middle coxae.

Pronotum densely evenly punctured (fig. 296); calli smooth, separated from each other by a band of punctures; each lateral margin with a row of 4-6 submarginal setigerous punctures.

Scutellum densely and evenly punctured with exception of anterolateral angles and apex; the latter elongated, tongue-like (fig. 296).

Corium densely punctured; clavus with one complete and two partial rows of punctures; mesocorium with two rows of punctures paralleling clavo-corial suture, mesocorial disc evenly punctured; exocorium almost evenly punctured, punctures smaller than those on mesocorium; costa with one setigerous puncture; membrane dark brown, slightly shorter than or sometimes somewhat surpassing the tip of abdomen.

Propleuron with numerous deep punctures in depression and on the posterior convexity; evaporatoria as in fig. 297; lateral areas and lamella of meso- and metapleuron punctured.

Sternites glossy in the middle, sides densely and coarsely punctured.

Posterior femora subapically bearing distinct tooth on dorsal margin.

Genital structures as in figs. 299-300.

Measurements (male and female respectively): body length 6.65-6.85, 6.25-6.87; body width 3.56-3.70, 3.49-3.66; head length 1.02-1.05, 0.98-1.05; head width 1.46-1.48, 1.41-1.51; pronotum length 1.75-1.83, 1.85-2.02; pronotum width 3.34-3.37, 3.15-3.49; scutellum length 2.83-2.98, 2.73-3.05; scutellum width 2.10-2.14, 2.12-2.19; antennal segments: 0.35-0.42 : 0.39-0.40 : 0.47-0.53 : 0.67-0.72 : 0.81-0.82, 0.35-0.39 : 0.36-0.44 : 0.46-0.55 : 0.63-0.72 : 0.79-0.84.

#### TYPE MATERIAL EXAMINED

Lectotype female of *Geocnethus flavirostris* HORVÁTH (present designation): [INDONESIA]: Sumatra, Kleinkauf; Tandjong Morava; *flavirostris* det. HORVÁTH; *Geocnethus flavirostris* (HNHM).

Lectotype male of *Sehirus breviceps* HORVÁTH (present designation): [MALAYSIA]: Borneo, Kinabalu; *breviceps* det. HORVÁTH; Lectotype, *Sehirus breviceps* HORV., labelled by R.C. FROESCHNER 59 (HNHM).

Paralectotype female of *Sehirus breviceps* HORVÁTH: [MALAYSIA]: Borneo, Kinabalu; *breviceps* det. HORVÁTH (HNHM).

#### OTHER MATERIAL EXAMINED (5 males, 7 females)

MALAYSIA: 2451, Sarawak, Colonial Pool of Entomologist, 1 male, Serial No: 2451, A 552, Gen. et sp. indet., M.S.K. GHOURI det. 1963 (BMNH); Borneo, Sabah, Danum Valley, 70 km W Lahad Datu, Sungai Segama, W. side suspension bridge, 150m, 1 female 11.XII. 1989, sample Sab. 64, understorey secondary growth/canopy, riverine rainforest, at light, M.J. & J.P. DUFFELS (ZMA).

INDONESIA: Lahat, Zuid Sumatra, 1 female 2.II.1948, W.C. VERBOOM, Museum Leiden (RNH); omg. Palembang, 1 female begin 1947, W.C. VERBOOM, Museum Leiden (RNH).

BRUNEI: 125W m.v. light, Brunei: Temburong District, ridge NE of Kuala Belalong, approx. 300 m alt., 4 males 4 females October 1992, J.H. MARTIN coll., BM 1991-172 (BMNH, JAL).

DISTRIBUTION. - Sumatra, Borneo (Sarawak, Brunei).

BIOLOGICAL DATA. - One examined specimen has been collected at light in a rainforest.

### *Fromundus impunctatus*, new species

DIAGNOSIS. - Among those species of the genus without the subapical setigerous punctures on the clypeus and the body length exceeding 5.0 mm this new one may be detected by the absence of setigerous punctures on the costa combined with

the impunctate (or almost impunctate) sternites.

DESCRIPTION. - Head blackish brown; dorsally weakly punctured; clypeus slightly shorter than paraclypei, somewhat tapering apicad, subapically without setigerous punctures; each paraclypeus with 3 submarginal setigerous punctures bearing hair-like setae; eyes blackish brown, ocular index 2.50-2.63; ocelli reddish brown, interocellar index 7.0-8.0; antennae and rostrum brown.

Pronotum black, lateral margins and posterior fourth more brownish; disc weakly punctured, calli large, slightly elevated; each lateral margin with a row of 4-5 submarginal setigerous punctures; anterior margin deeply angularly insinuated.

Scutellum blackish brown, moderately punctured, basal fourth and apex impunctate; punctures of the same size as those on pronotum.

Corium dark castaneous, puncturation conspicuous; clavus with one complete and one partial row of punctures, as well as a basal patch of punctures close to scutellum; mesocorium with two rows of punctures paralleling clavo-corial suture, mesocorial disc basally densely punctured, apically moderately punctured, punctures slightly larger than those of scutellum; exocorium weakly punctured; costa elevated without setigerous punctures; membrane brown surpassing the tip of abdomen.

Propleuron of the same colour as pronotum, depression with several punctures; anterior convexity alutaceous, the posterior polished.

Sternites blackish brown, laterally distinctly transversely striated, impunctate or with a few punctures only.

Legs dark castaneous, posterior femora with small subapical tooth on the dorsal margin.

Measurements (female only): body length 6.40-6.52; body width 3.61-3.63; head length 1.01-1.05; head width 1.54-1.56; pronotum length 2.00-2.05; pronotum width 3.39-3.42; scutellum length 2.46-2.49; scutellum width 2.10-2.19; antennal segments: 0.28-0.31 : 0.35 : 3rd, 4th and 5th missing.

#### TYPE MATERIAL EXAMINED

Holotype female: Indes anglaises, Ajmer-Rajpudana, ex coll. R. HOLYNSKI (JAL).

Paratype female: the same data as the holotype (JAL).

DISTRIBUTION. - India.

### ***Fromundus opacellus*, new name**

(figs. 301-303)

*Geotomus opacus* DISTANT, 1908: 427; Lis, 1991b: 182 [name preoccupied by *Fromundus opacus* DISTANT, 1901].

*Brachysolen opacus* HORVÁTH, 1919: 270 [name preoccupied by *Fromundus opacus* DISTANT, 1901], new synonym.

DIAGNOSIS. - The clypeus without subapical setigerous punctures and the opaque, densely punctured body not exceeding 5.0 mm in length will easily separate this species from any other within the genus.

DESCRIPTION. - Body densely punctured, opaque, from dark brown to black in colour; setigerous punctures on body margins almost indistinct.

Head almost entirely densely punctured (fig. 301); clypeus as long as paraclypei, subapically without setigerous punctures; each paraclypeus submarginally with 2-3 hair-like setae; eyes dark brown or blackish brown, ocular



index 2.35-3.00; ocelli yellowish brown or reddish brown, interocellar index 5.0-6.5; antennae short; rostrum reaching middle coxae.

Pronotum densely punctured, calli small (fig. 301); anterior margin angularly insinuated; each lateral margin with a row of 4-5 submarginal setigerous punctures.

Scutellum very densely punctured, anterolateral angles smooth (fig. 301); apex elongated and broadly tongue-like.

Corium with puncturation not as dense as that of both pronotum and scutellum; clavus with one complete and two partial rows of punctures; mesocorium with two rows of punctures paralleling clavo-corial suture, mesocorial disc almost evenly punctured; exocorium somewhat depressed, distinctly punctured; costa with a single almost indistinct setigerous puncture; membrane brown or yellowish brown, slightly surpassing the tip of abdomen.

Propleuron polished with a few large punctures in depression; evaporatoria as in fig. 302.

Sternites densely punctured and slightly transversely wrinkled.

Posterior femora subapically with small, sometimes inconspicuous tooth on dorsal margin.

Paramere as in fig. 303.

Measurements (male and female respectively): body length 3.05-3.57, 3.18-3.54; body width 1.83-2.15, 1.94-2.22; head length 0.59-0.67, 0.60-0.61; head width 0.85-0.95, 0.92-1.00; pronotum length 0.88-1.15, 0.93-1.07; pronotum width 1.75-2.07, 1.89-2.11; scutellum length 1.39-1.55, 1.47-1.63; scutellum width 1.09-1.27, 1.21-1.32; antennal segments: 0.18-0.19 : 0.12-0.17 : 0.18-0.21 : 0.25-0.27 : 0.32-0.34, 0.18-0.20 : 0.12-0.18 : 0.21-0.25 : 0.22-0.27 : 0.32-0.33.

#### TYPE MATERIAL EXAMINED

Lectotype male of *Geotomus opacus* DISTANT (designated by LIS, 1991b: 182): [BURMA]: Rangoon, Birmania; DISTANT Coll. 1911-383; Type; *Geotomus opacus* DIST., Type; Brit. Mus. Type. No. Hem. 336; Lectotype det. J.A. LIS 1989 (BMNH).

Paralectotype male of *Geotomus opacus* DISTANT: [BURMA]: Paratype; Rangoon, Birmania; DISTANT coll. 1911-383; *Geotomus opacus* DIST. (BMNH).

Lectotype male of *Brachysolen opacus* HORVÁTH (present designation): [INDIA]: Bombay, Biró 1902; *opacus* HORV. det. HORVÁTH; Lectotype *Brachysolen opacus* HORV., labelled by R.C. FROESCHNER 59; *Brachysolen opacus* (HNHM).

Paralectotype female of *Brachysolen opacus* HORVÁTH: [INDIA]: Bombay, Biró 1902; *opacus* HORV. det. HORVÁTH, Paralectotype (HNHM).

#### OTHER MATERIAL EXAMINED (22 males, 15 females)

INDIA: Coimbatore, Madras St., 1400', 2 males IX 1972, P.S. NATHAN (CWS, JAL); South India, Coimbatore, 1 male 5.III. 13, FLETCHER coll. (JAL); Chikkaballapura, S. India, 1 female, J. CAMPBELL, Brit. Mus., 1926-171 (BMNH); Karumbagaram, Karikal Terr., S. India, 1 female VIII 1955, P.S. NATHAN coll. (CWS), 8 females 11 males VII 1954, 1 female I 1957, Réc. P.S. NATHAN (IRSNB, JAL); South India, Pondicherry State, Karikal, 4 males 2 females X-1966, 1 female III-1969, P.S. NATHAN (ZMA, JAL); Museum Leiden, S. India, Pondicherry State, Karikal, 2 males 1 female XI.1961, P. SUSAI NATHAN (RNH).

BURMA: Birmanie, Rangoon, 2 males, Don P. DUPUIS (IRSNB).

DISTRIBUTION. - India, Burma.

### *Fromundus opacus* DISTANT

(figs. 304-307)

*Fromundus opacus* DISTANT, 1901b: 583, 1902: 100; BERGROTH, 1908: 150.

DIAGNOSIS. - The clypeus bearing a pair of subapical hair-like setae, the ocular index ranging from 4.00 to 4.82, and the broadened and flattened costa will separate this species from all other members of the genus.

DESCRIPTION. - Body castaneous or dark castaneous, opaque, densely punctured.

Head densely and evenly punctured; clypeus as long as paraclypei, subapically with 2 setigerous punctures; each paraclypeus with a row of 6-7 submarginal hair-like setae (fig. 304); eyes small, brown or reddish brown, ocular index 4.00-4.82; ocelli small, brown, interocellar index 3.0-4.0; antennae brown; rostrum brown, reaching anterior margin of middle coxae.

Pronotum densely and coarsely punctured, punctures of the same size as those on head, calli small; anterior margin deeply angularly insinuated, the posterior almost straight; each lateral margin with a row of 5-7 submarginal setigerous punctures.

Scutellum entirely punctured with exception of anterolateral angles; all punctures as large as those of pronotum; apex elongated.

Corium broad, densely punctured; clavus with one complete and two partial rows of punctures; mesocorium with two rows of punctures paralleling clavo-corial suture, mesocorial disc almost evenly punctured; exocorium broad, evenly punctured; costa flattened and broadened, submarginally with one setigerous puncture; membrane semihyaline, yellowish brown, extending beyond the posterior extremity of abdomen.

Propleuron punctured in depression and on posterior convexity; evaporatoria as in fig. 305.

Sternites densely punctured.

Posterior femora slightly flattened, subapically with two (one large and one small) conspicuous teeth on the dorsal margin.

Genital structures of male as in figs. 306 & 307.

Measurements (male and female respectively): body length 4.15, 4.60; body width 2.56, 2.80; head length 0.85, 0.74; head width 1.05, 1.05; pronotum length 1.02, 1.24; pronotum width 2.34, 2.37; scutellum length 1.78, 1.73; scutellum width 1.45, 1.46; antennal segments: 0.24 : 2nd, 3rd, 4th and 5th missing, 0.25 : 0.18 : 0.24 : 0.28 : 5th missing.

#### TYPE MATERIAL EXAMINED

Lectotype female of *Fromundus opacus* DISTANT (present designation): [SRI LANKA]: Ceylon, GREEN Coll. 91-26; Type; *Fromundus opacus* DIST., Brit. Mus. Type No. Hem. 335 (BMNH).

Paralectotype male: [SRI LANKA]: Paratype; Ceylon, GREEN Coll. 91-26; *Fromundus opacus* DIST. (BMNH).

DISTRIBUTION. - Sri Lanka.

### *Fromundus pseudopacus*, new species

(figs. 308-309)

DIAGNOSIS. - This new species is closely allied to *F. opacus* in the presence of the pair of subapical setigerous punctures on the clypeus. Nevertheless, the former can be easily distinguished from the latter by the larger eyes (ocular index 3.00-3.27), its not broadened costal margins, and by the different shape of the apical part of the penis (figs. 307 & 309).

DESCRIPTION. - Body from brown to almost black, densely punctured, almost opaque.

Head, except for clypeus and posterior margin densely punctured; clypeus as long as paraclypei, subapically with a pair of hair-like setae; each paraclypeus with a row of 6-7 submarginal hair-like setae; eyes large, ocular index 3.00-3.27; interocellar index 5.0-8.0; rostrum surpassing middle of mesosternum.

Pronotum densely and coarsely punctured, punctures evidently large than those of head, calli small; anterior margin deeply insinuated, the posterior almost straight; each lateral margin with a row of 5-7 submarginal setigerous punctures bearing hair-like setae.

Scutellum, except for anterolateral angles, densely punctured, punctures of the same size as those on pronotum; apex slightly elongated.

Corium with a puncturation pattern as in *F. opacus*; punctures slightly smaller than those on scutellum; costa with 1 setigerous puncture; membrane milky white, sometimes slightly browned, reaching or somewhat surpassing the tip of abdomen.

Propleuron polished; depression, posterior convexity and apical half of the anterior with numerous punctures; evaporatoria typical of the genus, the lamella on metapleuron as well as lateral areas of both meso- and metapleuron with large punctures.

Posterior femora slightly flattened, subapically with conspicuous tooth on dorsal margin.

Male genitalia as in figs. 308-309.

Measurements (male and female respectively): body length 4.75-4.80, 4.27-4.46; body width 2.61-2.76, 2.53-2.61; head length 0.74-0.75, 0.79-0.83; head width 1.10-1.12, 1.07-1.12; pronotum length 1.46-1.58, 1.37-1.54; pronotum width 2.54-2.68, 2.46-2.55; scutellum length 1.88-2.05, 1.85-1.98; scutellum width 1.68-1.79, 1.63-1.78; antennal segments: 0.28-0.30 : 0.26-0.28 : 0.29-0.36 : 0.43-0.45 : 0.51-0.55, 0.24-0.31 : 0.24-0.28 : 0.29-0.35 : 0.41-0.42 : 5th missing.

#### TYPE MATERIAL EXAMINED

Holotype male: [VIETNAM]: Muséum Paris, Tonkin, reg. de Hoa-Binh, A. de COOMAN 1928 (MNHN).

Paratypes: 1 female 1 male: [VIETNAM]: Muséum Paris, Tonkin, reg. de Hoa-Binh, A. de COOMAN 1927 (MNHN); 1 male: [VIETNAM]: Tonkin, Hoabinh, Aug. 1918, R.V. de SALVAZA (JAL); 1 female: [VIETNAM]: Tonkin, Hoabinh, Jan. 1917, R.V. de SALVAZA (JAL).

DISTRIBUTION. - Vietnam.

### *Fromundus pygmaeus* (DALLAS), new combination

(fig. 310)

*Aethus pygmaeus* DALLAS, 1851: 120; DOHRN, 1859: 9; WALKER, 1867: 158; STÅL, 1876: 26.

*Geotomus pygmaeus*: SIGNORET, 1881a: 650, 1883c: 51; ATKINSON, 1887: 55; LETHIERRY & SEVERIN, 1893: 73; DISTANT, 1901a: 101, 1902: 98, 1903: 230, 1906: 847; KIRKALDY, 1905: 359, 1910a: 112; BREDDIN, 1900: 289, 1906: 10, 1909: 263; MAXWELL-LEROY, 1909: 306; MAXWELL-LEROY & HOWLETT, 1909: 674; SCHOUTEDEN, 1909: 43, 1933: 44; ESAKI, 1926: 142; HOFFMANN, 1931: 139; WU, 1933: 209, 1935: 270; GIBSON-HILL, 1950: 208; BOX, 1953: 36; HASEGAWA, 1962: 6; STICHEL, 1962: 776; RUCKES, 1963: 316; KOBAYASHI, 1964: 21; FROESCHNER, 1967: 16; MILLER, 1931: 214, 1971: 52; TAKANO & YANAGIHARA, 1939: 135; HSIAO et al., 1977: 48; BHARGAVA & PRASAD, 1977: 329; JOSIFOV & KERZHNER, 1978: 190; TOMOKUNI, 1979: 104, 1982: 335; LINNAVUORI, 1986: 47; LIS, 1991b: 182, 1991e: 306.

*Cydnus rarociliatus* ELLENRIEDER, 1862: 139; STÅL, 1876: 27, syn. with *G. pygmaeus* by SIGNORET, 1881a: 650.

*Aethus rarociliatus*: WALKER, 1867: 160.

*Aethus? rarociliatus*: VOLLENHOVEN, 1868b: 18.

*Aethus nanulus* WALKER, 1867: 162; LETHIERRY & SEVERIN, 1893: 81; BREDDIN, 1906: 10, syn. with *G. pygmaeus* by DISTANT, 1899a: 222.

*Aethus pallidicornis* VOLLENHOVEN, 1868a: 177, 1868b: 17; WALKER, 1868: 534, syn. with *G. pygmaeus* by SIGNORET, 1883c: 51.

*Geotomus subtristis* BUCHANAN WHITE, 1877: 110; syn. with *G. pygmaeus* by SIGNORET, 1883c: 51.

*Geotomus jucundus* BUCHANAN WHITE, 1877: 111, syn. with *G. pygmaeus* by SIGNORET, 1883c: 51.

*Aethus nitens* KIRBY, 1900: 127; BERGROTH, 1908: 149; IZZARD, 1936: 578, syn. with *G. pygmaeus* by GIBSON-HILL, 1950: 208.

*Geotomus Lethierryi* SIGNORET, 1883c: 50; LETHIERRY & SEVERIN, 1893: 72, new synonym.

*Cydus apicalis*: HORVÁTH, 1879: 413.

*Geotomus macroevaporatorium* AHMAD, MOIZUDDIN & KHAN, 1979: 14 & 18, nomen nudum.

*Geotomus macroevaporatorius* MOIZUDDIN & AHMAD, 1990: 318, **new synonym**.

Misidentifications: AHMAD et al., 1979: 15 & 18; MOIZUDDIN & AHMAD, 1990: 323.

**DIAGNOSIS.** - The species is best diagnosed by the set of following characters: the clypeus without the subapical pair of hair-like setae; the body length not exceeding 5.0 mm; the pronotum and the scutellum shiny and moderately punctured; the paramere compact as in fig. 310.

**DESCRIPTION.** - Body from ochraceous to black, shiny, moderately punctured.

Head with paraclypei sparsely punctured; clypeus as long as paraclypei, without subapical setigerous punctures; each paraclypeus with a row of 2-5 submarginal setigerous punctures; eyes reddish brown, reddish gray or blackish brown, ocular index 2.50-3.20; ocelli yellowish brown or reddish brown, interocellar index 7.0-9.0; antennae and rostrum paler than dorsum, rostrum reaching middle coxae.

Pronotum moderately punctured; anterior margin deeply angularly insinuated; each lateral margin with a row of 4-6 submarginal setigerous punctures.

Scutellum basally impunctate or weakly punctured, remaining part of disc densely punctured; apex elongated, tongue-like, finely punctured.

Corium with the puncturation pattern as in *F. opacellus*; costa with 1 setigerous puncture; membrane hyaline, pale brownish, surpassing the tip of abdomen.

Propleuron polished, with a few punctures in depression; evaporatoria as in *F. opacellus*.

Sternites laterally rugosely punctured.

Legs not specifically modified.

Paramere as in fig. 310.

Measurements (male and female respectively): body length 3.19-4.05, 3.32-4.48; body width 1.72-2.32, 1.86-2.51; head length 0.53-0.66, 0.56-0.68; head width 0.87-1.05, 0.90-1.08; pronotum length 0.90-1.21, 0.94-1.34; pronotum width 1.73-2.15, 1.80-2.36; scutellum length 1.22-1.66, 1.28-1.81; scutellum width 1.09-1.41, 1.12-1.57; antennal segments 0.16-0.20 : 0.18-0.21 : 0.21-0.28 : 0.26-0.35 : 0.36-0.39; 0.16-0.21 : 0.18-0.22 : 0.21-0.30 : 0.26-0.36 : 0.37-0.39.

#### TYPE MATERIAL EXAMINED

Lectotype female of *Aethus pygmaeus* DALLAS (present designation): [INDIA]: Type; E. Ind.; 64. *Aethus pygmaeus* DALLAS; Brit. Mus. Type No. Hem. 330 (BMNH).

Lectotype male of *Aethus nanulus* WALKER (present designation): [INDONESIA]: Celebes; Type; 83. *Aethus nanulus* WALKER; Brit. Mus. Type No. Hem. 332 (BMNH).

Paralectotype female of *Aethus nanulus* WALKER: [INDONESIA]: the same data as the holotype, glued on the same card as the former (BMNH).

Lectotype female of *Geotomus subtristis* BUCHANAN WHITE (present designation): [HAWAII]: Type H.T.; *Geotomus subtristis* type; Hawaii; *Geotomus subtristis* B.W.; Pres by Perth Museum, B.M. 1953-629 (BMNH).

Lectotype female of *Geotomus jucundus* BUCHANAN WHITE (present designation): [HAWAII]: Hawaii 2; 1; *Geotomus jucundus* 2, Type; Type; *Geotomus pygmaeus* DALL.; Press by Perth Museum, B.M. 1953-629 (BMNH).

Lectotype male of *Geotomus lethierryi* SIGNORET (present designation): [INDONESIA]: Java; *Geotomus lethierryi* Sign., Lectotype (MNHN).

Paratype male of *Geotomus macroevaporatorius* MOIZUDDIN & AHMAD: [PAKISTAN]: Karachi Campus, 5.11.76, coll. MOIZUDDIN; *Geotomus macroevaporatorius*, Paratype (NHMUK).

#### OTHER MATERIAL EXAMINED (735 males, 1013 females)

PAKISTAN: Sujawal, 2 females 1 male 8.11.1976, on light, Moiz., det. as *Geotomus macroevaporatorius* (NHMUK); West-Pakistan, Rawalpindi, 1 male 13-16.10.1971, LF, Ig. Heiss, det. as *Geotomus pygmaeus* Dall. by SEIDENSTÜCKER, 1971 (EHC).

CHINA: China, 1 female, coll. SIGNORET, det. as *pygmaeus* by SIGNORET (NhmW); Shanghai, 1 female 19 V 1934, E. SUENSEN, Zool. Mus. Helsinki (ZMHU); Umg. Shanghai, Süd-Ost-China, 3 males 3 females, det. as *Geotomus pygmaeus* (DALL.) by R.C. FROESCHNER (NhmW); Formosa, Takao: 2 females 3 males 29 V 07, Zool. Mus. Berlin (MNHU); 2 females 1 male 1907, SAUTER (HNHM), 1 female 1 male, SAUTER, det. as *pygmaeus* (NhmW), 5 males 3 females, Hans SAUTER leg., 29.V.1907, vend. 3.I.1908 (ZIZM); Formosa, 1 female, P.A. HOLST., 1902-336 (BMNH); Formosa, 1 male 2 females, T. KANO collection, NSMT-He 00467/00471 (NSMT); Formosa, Kengting Park, Pingtung Hsien, 3 males 2 females 4.V.1982, N. OHBAYASHI leg. (NSMT); Taiwan: Kaohsiung, Shanning, 640 m, 15 males 12 females 1-10 May 1988, R. DAVIDSON, C. YOUNG, J. RAWLINS (CMNH); China: Taiwan, Nantou Kuantaoshi, 1 female 1-31 July 1969, Coll. Chen YOUNG (CMNH); Kien Tchang, Chaîne du Siao Siang Ling, 2500m d'alt, 1 female, Mars, Dr. LEGENDRE 1912, Muséum Paris (MNH); Chine, Nan King, 1 female 1 male, J. de JOANNIS 1908, Muséum Paris (MNH); Kiau-tshau, 1 female (HNHM); Fukien prov., Amoy, 3 females 3 males 1922, S.F. Light, Pres. by Imp. Bur. Ent., Brit. Mus. 1923-383 (BMNH, JAL); China, Prov. Fokien, G. SIEMSEN, 1 male 1 female vend. 28.10.1910, 2 males 2 females vend. 25.VIII.1905 (ZIZM); Foochow, 2 females, 1935-6, 1936-37, M.S. Yang, Pres. by Com. Inst. Ent., B.M. 1948-548, 536 (BMNH); Kuching, 2 females 3 males, J.E.A. LEWIS, 1910-116 (BMNH, JAL); Futschau, China, 1 female, Cons. G. SIEMSEN lg., vend. 13.VI.1903 (ZIZM); Canton, China, 1 female, W. HELMS leg., ded. 8.VIII.1904 (ZIZM); Kiang-Si, Muséum Paris, 2 females, A. DAVID 1869 (MNH); Yunnan Centr., Est de Tchín-Kiang, Lou-Fou-Tsuen (Ing-Ko-Tsue), Confl. Lou-Nan-Ho et Ta-Ken-Ho, 1 male, Muséum Paris, Dr. GERVAIS 1905 (MNH); Hsing-ngan, Shensi, 1 female (ZIP); Setschuan, r. Tun, bridge Lioutintshao, 1 male 14-15 IV 93, POMAN (ZIP); Kuschán, Fotzhou, Futzhen, China, 2 males 1 female 2/IX 957, M.S. YANG (ZIP).

HONG KONG: Tai Lung, N.T., Hong Kong, at light, 2 males 24-4-67, P.Y.S.O., det. as *Geotomus pygmaeus* DALL. by M.S.K. GHOURI 1967, Pres by Com. Inst. Ent., B.M. 1967-3, (BMNH).

NEPAL: Tablejung Distr., Sangu, c.b. 200', 1 male 27.II.-4.III.1962, W.G. INGLIS, Brit. Mus. East Nepal Exp., 1961-2, B.M. 1962-177 (BMNH, JAL); Nepal, India, 1 female, STAUDINGER & BANG-HAAS (ZIP); Kathmandu, Nepal, 1 female Sept. 27, 1979, M. SATO leg. (NSMT); Kathmandu, Nepal, 1 male, lg. H. FRANZ, Collection E. HEISS Innsbruck (EHC); C-Nepal, Kathmandu Valley, Godavari, 1500m, 1 female 29.4.84, HOLZSCHUH, Collection E. HEISS Innsbruck (EHC); C. Nepal, Kathmandu Valley, Nargakot, 1500m, 1992, 1 female 1.6.1993, leg. J. PROBST (NhmW); C. Nepal, Pokhara, 800m alt., Kaski Distr., 1 male 1 female 11.X.1981, Y. NISHIKAWA (NSMT); East Nepal, Barda (150m), 1 male 11.XI.1981, M. SAKAI leg. (NSMT); Amlekhgani, Therai, Nepal, 1 male 2 females 7-10.10.72, lg. H. FRANZ, Collection E. HEISS Innsbruck (EHC); 351, Taplejung Distr., Yamputhin, cultural land, open forest, 1650-1800m, 1 female 26 Apr - 1 May 1988, J. MARTENS & W. SCHAWALLER leg. (JMC); 332, Taplejung Distr., from Yektin to Worebung Pass, 1500-1800m, cultural land, 1 female 21 Apr 1988, J. MARTENS & W. SCHAWALLER leg. (JMC); 271, Taplejung Distr., Kabeli Khola, Yamputhin, 1650-1800m, Kulturland/Mischwald/Bambus, 1 female 3/4 Sept 83, MARTENS & DAAMS (JMC); 414, Sankhua Sabha Distr., Arun Valley, Chichila, 1900-2000m, *Quercus* forest, bushes near village, 1 male 18-20 June 88, J. MARTENS & W. SCHAWALLER leg. (JMC); Nepal centr., 1993 (3), Chitwan distr., Chitwan N.P., 230m, 2 males 28-30.5., lg. J. PROBST (NhmW).

INDIA: Coimbatore, S. India, Madras St., 1400', 3 females 1 male, 2 IX 1950, 6 females IX 1972, 3 males 3 females X.1972, P.S. NATHAN (CWS, JAL); Kulu, Kandi (Indes Angl.), 1 female Mai 1914, G. BABAUT, Muséum Paris (MNH); Maissour Gathes (Mt. Tabourel), 1 female, R. OBERTHUR 1898, Muséum Paris (MNH); Mathéran prés Bombay, 3 males, M. MAINDRON, Muséum Paris, coll. NOUALHIER 1898 (MNH); Spliti, Maukaran (Indes Angl.), 1 female Mai 1914, G. BABAUT, Muséum Paris (MNH); Yercaud, Shevaroy Hills, 4500ft, S. India, 3 females 2 males II/III 1955, Réc. P.S. NATHAN (IRSNB, JAL); Mandla et env., Indes Anglaises (Prov. Centr.), 1 female, G. BABAUT, Mai 1914, Muséum Paris (MNH); S. India, Karnataka, Gersoppa (Jog Falls), 11 females 6 males 19-24.XI.1977, c. 600m, Zool. Mus. Copenhagen Exp. (ZMC, JAL); Orissa, Jajpur-Keonjhar, Distr. Daitari, 1 female 1 male, leg. Gy. TOPAL, No 987, at light during monsoon, 1967 (HNHM); Molem, Goa, 120m, 4 females 2 males, No. 87, MV lamp, 15.II.1980, leg. Topal (HNHM, JAL); Calcutta, West Bengal, 1 female 1 male 24.XI.1966, on lamps, leg. Gy. TOPAL (HNHM); Calcutta, at light, 3 females (BMNH); Kashmir, Srinagar, Zabarwon Hill, Pari Mahal, 1 female 1 male 25.V.1967, No. 393, under stones, from dung, leg. Gy. TOPAL (HNHM); Dehra Dun, 1 female 2 males 13.I.1913, under stone, From Ind. Mus., DISTANT Coll., B.M. 1911-383 (BMNH, JAL); Dehra Dun, 2 males 6.VII.1910, A. DOENBES, 1 female VIII.1932, M.G. CHAMPION (BMNH); Darjeeling, 4 females 2 males, G. ROGERS, 1906-202 (BMNH, JAL); Behar, Pusa, 1 female 1 male 30 VI 1915, The Govt. Entomologist, Pres. by Imp. Bur. Ent., Brit. Mus. 1921-191 (BMNH); Bandra, 1 female 1 male, Dr. JAYAKAR, 1905-152 (BMNH); Kangra Valley, Punjab, 4500ft, 1 male May 1899, DUDGEON, 1903-37 (BMNH); Fyzabad, Unit. Prov. India, 2 females, R.W.G. HINGSTON, B.M. 1923-293 (BMNH); Annandale, 2 females, Kulattupuzha, W. base of W. Ghats, Travancore, 1 male 19.IX.08, DISTANT Coll., B.M. 1911-383 (BMNH); South India, Anamalai Hills, Cinchona, 3500 ft. 1 male 2 females IV.1969, P.S. NATHAN (ZMA); India, Assam, reserv. Kazirachi, 2 males 9-11.V.61, S.E. KOROVIN (ZIP); India, Kalimpong, 1 male 1 female V.961, S. KOROVIN (ZIP); New Delhi, India, 2 females 17 VIII 951, E. IVANOVA (ZIP); Jorhat, Assam, 1 female 28 V 957, ALEKSANDROV (ZIP); Andamans, 9 females, ROEPDORFF (BMNH, JAL); Nicobars, 1 female 2 males, ROEPDORFF (BMNH).

SRI LANKA: Ceylon, 1 female, NIETNER (IZPAS); Ceylon, Henaratgoda, 1 female, det. as *pygmaeus* (NhmW); Puwakpitiya, Ceylon, 3 male 3 female, Hiver 1906-7, E. BUGNION, coll. BUGNION, Muséum Paris (MNH); Weligama, Ceylon, Horn, 1 male 1 female, STAUDINGER & BANG-HAAS (ZIP); Sri Lanka, Nat. Park Yala, Mahasilawa, 8 km ENE Palatupana, 14 males 13 females 20 X 982 (ZIP, JAL); Ceylon, Colombo, 1



male 3 females 4.2.78, PLOSSL, Collection E. HEISS Innsbruck (EHC).

BURMA: Birmania, Bhamó: 5 females 2 males VIII 1885, FEA (IRSNB), 1 male 1 female VII 1886, FEA (ZIP); Rangun, Burma, 1 female 26 XII 956, Mamaev (ZIP); Tougong, 1 female 1 male V-X.88, L. FEA, det. as *Geotomus pygmaeus* DALL., Museo Civico di Genova (MCSN); Birmanie, Claine, 1 male, Muséum Paris (MNHN); Mountains Tenasserim, Siam Border, Lat. N.12°40' to 14°10', 5 females 5 males May to July 1913, K.G. GAIRDNER, 1913-474 (BMNH, JAL); Mishmi Hills, 1 female, Platon, M. STEELE, Brit. Mus. 1935-312 (BMNH); Mandalay, Birmania, 1 female, FEA VI.1885, Birma, Leonardo FEA leg., vend. 1.I.1895, Zool. Mus. Hamburg (ZIZM).

CAMBODIA: Ang-kor, 3 females 1 male, Muséum Paris (MNHN, JAL); Cambodge, Phnom-Penh, 1 female 1 male, Muséum Paris (MNHN); Cambodge, Promtep, 1 female, Muséum Paris (MNHN).

LAOS: Vientian, 1 female 15.1.986, 2 females 26.1.986, 1 male 2 females 27.1.-1.11.986, at light, KABAKOV (ZIP).

VIETNAM: Bac Ninh, 1 male, Muséum Paris (MNHN); Cho-Ganh: 1 female 2 males, L. DUPORE, Zool. Mus. Helsinki (ZMHU), 6 female 10 males, L. DUPORE, Muséum Paris, coll. E. FLEUTIAUX 1919 (MNHN); Long Xuyen, 1 female, Muséum Paris, coll. E. FLEUTIAUX 1919 (MNHN); Pr. Annam, Thang Hoa, 1 female, ex coll. OBERTHUR (IRSNB); Annam, Sam-Son, 7 females 8 males Juillet, DUPORE, Muséum Paris, coll. E. FLEUTIAUX 1919 (MNHN, JAL); Annam, Hué, 2 females 1 male Novembre, coll. A. BONHOURE 1909, Muséum Paris (MNHN); Saigon: 3 females 4 males, 7-11, Muséum Paris, coll. E. FLEUTIAUX 1919 (MNHN), 1 female, Collection E. de BERGEVIN, Muséum Paris, det. as *Geotomus pygmaeus* DALL. (MNHN), 7 males, coll. A. BONHOURE 1909, Aout, Muséum Paris (MNHN); Tonkin, region de Hoa-Binh, 1 female 2 males 1931, 4 females 5 males 1927, Muséum Paris, A. de COOMAN (MNHN); Hoa Binh, 500m, 1 female 21.X.1986, No. 85, on light, leg. VÁSÁRHELYI (HNHM); Tonkin, env. d'Hanoi, 2 females 1908, A. KREMPF, Muséum Paris (MNHN); Tonkin, Hanoi, 2 females Jan. 1917, R.V. de SALVAZA (BMNH); Hanoi, 1 male Juillet, coll. A. BONHOURE 1909, Muséum Paris (MNHN); Hanoi 35, Tonkin/1937, 1 male 1 female, Le MOULT vend., via REINBEK, Eing. Nr. 1 1957 (ZIZM); Hanoi City, Ho Tay, 4 females 4 males 8.X.1986, No. 4, on light, leg. VÁSÁRHELYI (HNHM, JAL); Tonkin Centr., Env. de Tuyen-Quan, 4 females 2 males, A. WEISS 1901, Muséum Paris (MNHN, JAL); Cochinchina, Mytho, 1 male (MNHN); Haut-Tonkin, Lao Kay, 1 male, Vitalis de SALVAZA, Mme A. VUILLET 1920, Muséum Paris (MNHN); Tonkin, 4 females 1 male, SAUTER 1901 (SMNS, JAL); Tonkin, Phu Lang Thuong, 1 female 3 male, Collection E. de BERGEVIN, Avril-May, Muséum Paris, det. as *Geotomus pygmaeus* DALL. (MNHN); Tonkin, HaGiang, 4 females 2 males, Cap. Bonifacy 1913, Muséum Paris (MNHN); Moc Chau, 850m, 3 female 2 males 26.X.1986, No. 105, on light, leg. VÁSÁRHELYI (HNHM, JAL); Tam Dao, 200m, 6 females 2 males 12.X.1986, No. 35, on light, leg. VÁSÁRHELYI (HNHM, JAL); Prov. Ha-Tinh, foresters Hông-sôn, 150m, 1 female 1 male 14.VIII.1963, forêt trop. pluv., a la lumière, T. Pocs (HNHM); Tonkin, Phu Lang Thuong, 2 males, Le MOULT vend., via REINBEK, Eing. Nr. 1 1957 (ZIZM); Annam, Phuc-Son, 2 males 4 females, Nov. Dez., H. FRUHSTORFER, vend. 10.XII.1901 (ZIZM); N-Vietnam, Cuc Phuong N.P., 100km S Hanoi, 9 males 18 females 2-12.V.1991, leg. E. JENDEK 1991 (NhMW, JAL); N-Vietnam, Chua Huong (Huong Son), 60km SW Hanoi, 1 female 26-29.IV.1991, leg. E. JENDEK (NhMW); N-Vietnam, Hanoi, 23 males 35 females 20-30.IV.1991, at light, leg. E. JENDEK (NhMW, JAL); Vietnam, prov. Phykhanh, Nha Trang, at light, 14 males 24 females 17.IV.1987, A. PONOMARENKO leg. (JAL); Vietnam, prov. Kien Giang, isl Tho Tu, 2 females 9.IV.1987, A. PONOMARENKO leg. (JAL); N-Vietnam, Chua Huong (Huong Son), 60km SW Hanoi, 1 female 26-29.IV.1991, leg. E. JENDEK 1991 (NhMW).

PHILIPPINES: Los Banos, 3 females 1 male, P.I. BAKER, Zool. Mus. Helsinki (ZMHU); Manille, 1 female (IRSNB); Manila, 1 female 1890, 1911-301 (BMNH); S. Theodoro, Mindoro, 1 male, Coll. Dr. D. MAC GILLAVRY (ZMA); Philippine Islands, Luzon: Isabela Prov., San Mariano, 1 male 1 female IV-22-1961, P.I. natl. Mus. & AMNH Expedition (AMNH); Mt. Makiling, Luzon, 1 female, Baker (ZIP); Philippines, Languan, 10m, N. Palawan Is. 1 male 2 females 26.VIII.1985, M. TOMOKUNI (NSMT); Philippines, Trident Mines, 500m, nr. Narra, C. Palawan Is., 1 male 1 female 5.IX.1985, By light trap, M. TOMOKUNI (NSMT); Philippines, Baracatan, 1500m, Mindanao, 1 male June 27-29, 1977, M. SATO leg. (NSMT); Philippines, Luzon, Baguio, Botanical Garden, 1 female 8.VII.1970, M. SATO leg. (NSMT); Philippines, Matalangao, 150m, N. Palawan Is., 2 females 28.VIII.1985, By light trap, M. TOMOKUNI (NSMT); Philippines, Gasy, ca. 200m, nr. Maitum, South Cotabato, Mindanao Is., 1 female 10.VIII.1985, Y. NISHIKAWA (NSMT); Philippinen - Mindoro, 10km W Puerto Galera, 1 female 24-26.11.1992, leg. SCHILLHAMMER (12) (NhMW).

THAILAND: Chiang Mai Province, Fang Horticult. Exp. Station, 550-600m, 2 females 20.X.1981, Zool. Mus. Copenhagen leg. (ZMC); Chiang Mai Province, Chiang Mai, 325m, 3 females 1 male 15-30.X.1984, KARSHOLT, LOMHOLT & NIELSEN leg., Zool. Mus. Copenhagen (ZMC); Thailand, Chiang mai, 1 male 1 female 23.X.1983, Y. NISHIKAWA (NSMT); Sam Ngao, at Bhumipol Dam, 9 females 10 males 6-8.XI.1979, Zool. Mus. Copenhagen Exp. (ZMC, JAL); Siam, Bangkok, 3 females, Collin de PLANCY 1908, Muséum Paris (MNHN); Siam, Vieng Vai, 1 female 23-24.IV.1920, R.V. de SALVAZA, Indo-China, R.V. de SALVAZA, 1920-280 (BMNH); Thailand, Phuket, Patong Beach, 3 males 1 female 5-9.III.1986, op licht, T. & M. SIMON THOMAS (ZMA); Nhatrang, 1 female, Muséum Paris, A. KREMPF 1913 (MNHN); Thailand, 240 km NW Bangkok, 25 km NW Lan-Sak, 23 males 34 females III.1989, 110m, at light, leg. THIELEN (NhMW, JAL); Thailand, 90m, 150km NW Bangkok, 10km W Han Kha, 19 males 23 females VII.1990, at light, leg. THIELEN (NhMW, JAL); Thailand, Bangsaen, 2 females 16.XI.1968, M. SATO leg. (NSMT).

SINGAPORE: Singapore, 1 male, Biro 1902 (HNHM); Singapore, 1 male July 1922, F.N. CHOSE Coll., Ex F.M.S. Museum, B.M. 1955-354 (BMNH); Singapore, Bajan, 3 females July 1922, F.N.C. Coll., Ex F.M.S. Museum, B.M. 1955-354 (BMNH); Singap., 1 female, STAUDINGER & BANG-Haas (ZIP).



**MALAYSIA:** Malacca, Perak, 1 female, STAUDINGER, Muséum Paris, coll. NOUALHIER 1898 (MNHN); Malaya, Upper Perak, Tahong, 1 male 29.8.1941, at light (BMNH); Malacca, 1 male, de MORGAN 157-96, Muséum Paris (MNHN); Presou ile de Malacca, 1 female 1899, Errington de la CROIX et P. CHAPE, Muséum Paris (MNHN); Pahang, Taman Negara, 18 females 10 males 1-13.III.1984, at light, J. JESSOP, B.M. 1984-230 (BMNH); Malaya, Serdang, 1 female 1 male 22.2.1933, N.C.E. Miller, Agric. Dept. (BMNH, JAL); Malaya, Kuala Lumpur, 2 females 1 male 10.IX.1928, at light (BMNH, JAL); Malaya, Erubi Rd, 1 male 19.2.1935, Entom. Div. Agric. Dept., Rotting banana stump (BMNH); Malay Penin., West Coast, Langkawi Isl., 1 female April 25th, 1928 (BMNH); Nord-Borneo, Kinabalu, 2 females III.1969 (NhMW); N. Borneo: Kudat, 2 females 1 male Aug. 31st 1927, Bettotan nr. Sandakan, 6 females 3 males Aug. 11th 1927, Samawang nr. Sandakan, 4 females 4 males 13 July 1927, at light, Ex F.M.S. Museum, B.M. 1955-354 (BMNH, JAL); Sarawak, Gunong Mulu Nat. Park, Base Camp, 1 female 2 males V-VIII 1978, P.M. HAMMOND & J.E. MARSHALL, B.M. 1978-49 (BMNH, JAL); Sarawak, Simenggang, 1 male 11-X-1962, Coll. C.R. WALLACE, at electric light, night, B.M. 1974-465 (BMNH); Sarawak, Semongok, 1 male 20-IX-1967, light trap, Coll. G.H.L. ROTHSCHILD, Pres. by Com. Inst. Ent., B.M. 1974-1 (BMNH); N.Borneo, Jesselton, 4 females 4 males 1962-3, J. BRAY, B.M. 1964-236 (BMNH, JAL); Malaysia, Sarawak, Mulu NP, 1 male 3-6.3.1993, leg. H. ZETTEL (14), Benarat Inn, am Licht (NhMW); N. Borneo, Bukit Kretam area, 1 male, J.D.H. HEDLEY, B.M. 1952-463 (BMNH); Sabah, 2000ft, R. Karamuak, 3 females, 1-7.IX.1977, 7m SSE Telupid, M.E. BACCHUS, B.M. 1978-48 (BMNH, JAL); Sabah, Mt. Kinabalu, 1 female 20-26.II.1964 Kundasan, 1 female 13.II.1964 Mesilau, 6 females 5 males 4-8.III.1964, J. SMART, Royal Soc. Exp., B.M. 1964-250 (BMNH, JAL); East Malaysia, Telupid, Alt. 800m, 80km East from Ranau, Sabah, 2 males XI-6, 1979, Shinji NAGAI leg. (NSMT); Borneo, E. Malaysia, Sepilok, Sabah, 1 female 5-11, VIII 1983, N. OHBAYASHI leg. (NSMT); Borneo Sabah, Field Centre at Sungai Segama above staff-quarters, 150 m, 13 males 16 females 5.XII.1989, Danum Valley, 70 km W Lahad Datu, M.J. & J.P. DUFFELS, sample Sab. 57, at light (ZMA); Borneo Sabah, Danum Valley, 70 km W Lahad Datu, Sungai Segama, W. side suspension bridge, 150m, 7 males 3 females 11.XII.1989, M.J. & J.P. DUFFELS, sample Sab. 64, understorey secondary growth/canopy riverine rainforest, at light (ZMA); Borneo Sabah, 15 km W Lahat Datu, 4 males 4 females 7.XII.1989, M.J. & J.P. DUFFELS, sample Sab. 61, cacao-plantation/acacia shadowtrees, at light (ZMA); Borneo Sabah, Danum Valley, 70 km W Lahad Datu, Field Centre nr. Main Trail East, 150m, 3 males 6 females 3.XII.1989, M.J. & J.P. DUFFELS, sample Sab. 55, primary forest margin along road, at light (ZMA); Borneo Sabah, Danum Valley, 70 km W Lahad datu, Next to bridge Nature Trail, 150 m, 3 males 3 females 1.XII.1989, M.J. & J.P. DUFFELS, sample Sab. 50, rainforest along narrow stream, at light (ZMA); RMNH Leiden, E. Sabah, Lahat Datu, 60 km W of Danum Valley, Field Centre, at junction Sg Segama and Sg Palum Tambun, 150m, 4.58'N 117.48'E, 1 male 2 females 14 March 1987, at light, edge of untouched evergreen lowland rainforest, leg. VAN TOL & HUISMAN (RNH).

**BRUNEI:** Brunei, Seria, 1 female 3 males V-VIII 1978, P.M. HAMMOND & J.E. MARSHALL, B.M. 1978-49 (BMNH, JAL); Brunei, Bukit Sulang, nr. Lamunin, N.E. Stork, 6 females 1 male 20.VIII-10.IX.82, B.M. 1982-388, FOGGING (BMNH, JAL); Brunei, Temburong District, ridge NE of Kuala Belalong, 125W m.v. light, 1 female October 1992, approx. 300m alt., J.H. MARTIN coll., B.M. 1992-172 (BMNH); Brunei, Bandar, Sari Bagawan, 1 male 1 female 4.X.1992, at light, J.H. MARTIN coll. (BMNH).

**INDONESIA:** Sumatra, Bengkulu, 7 females 2 males, MAINDRON 1885, det. as *Cydnius bengalensis* LETH.? by We-I YANG 1935, Muséum Paris (MNHN); Sumatra, Labuan, 12 females 2 males 1922-23, Bilik PALM., Zool. Mus. Helsinki (ZMHU, JAL); Sumatra, Soekaranda: 1 female I 1894, DOHRN, 3 males 1 female, Dr. H. DOHRN S. (IZPAS); Sumatra, Kayu Tanam, 1 male Agosto e Sett. 1878, O. BECCARI, det. as *pygmaeus* by SIGNORET (NhMW); Sumatra, Bindjei-Medan, 106 females 72 males, Dr. C.R. PFISTER, coll. Dr. D. Mac GILLAVRY (ZMA, JAL); Sumatra, Bela Negri Bahroe, 6 females 4 males, Dr. C.R. PFISTER, coll. Dr. D. Mac GILLAVRY (ZMA, JAL); Sumatra, Tandjoeng bij, Moeara Enim, 2 females 3 males 1924, E. DOUGLAS (ZMA); Sumatra, Deli, 2 females 3 males, Coll. Dr. D. Mac GILLAVRY (ZMA); Sumatra, Bamkoelem, Lebong Tandai, 1 females 2 males 1920-23, C.J. BROOKS, Brit. Mus. 1926-12 (BMNH, JAL); Serdang, Sumatra, 2 males 1 females, O. PUTTFARKEN leg., ded. 19.I.1897 (ZIZM); Indrapura-Estate, Ost-Sumatra, 5 males 14 females, Gebr. SIEMSEN LEG., ded. 18.XII.1894, det. as *Geotomus pygmaeus* Dall. by G. BREDDIN (ZIZM); Sumatra, Benkoelen, Tambang Sawak, 2 males 5 females, leg. E. DOUGLAS 1929, coll. Dr. D. Mac GILLAVRY (ZMA); Sumatra, Perboeanjan bij Medan, 2 males 7 females, coll. Dr. D. Mac GILLAVRY (ZMA); O. Sumatra, Marbau, 1 male 11 females 1932, Dr. HOPMAN, coll. Dr. D. Mac GILLAVRY (ZMA); Sumatra, Bela Negri Bahroe, 25 males 43 females, coll. Dr. D. Mac GILLAVRY (ZMA); N. Sumatra, Aceh, 20km S Kutacane, 11 males 28 females 18.8.1992, 350m, leg. BARRIES & CATE (NhMW, JAL); Indonesia, Sumatra, Dolok Merangir, 10 males 6 females, E.W. DIEHL (AMNH, JAL); Sumatra, 180m, Dolok Merangir, 2 males 2 females April-June 1970, E.W. DIEHL (AMNH); Museum Leiden, N. Sumatra, Deli, Dolok Merangir, 3.06'N-99.03'E, 1 male 1 female 31.V.-1.VI.1972, J. KRIKKEN, no 5, ca 200m (RNH); W-Sumatra, Siberut Isl., Saliguma, 1 male 1 female 30.8.1992, Indonesia, leg. BARRIES & CATE (NhMW); Indonesia, Sitinjaulaut, alt. 1,000m, 25km east from Padang, Sumatera barat, 1 male 21.VIII.1977, Shinji NAGAI leg. (NSMT); Java, 1 female 2 males, det. as *Geotomus pallidicornis* VOLL., 1 female, det. as *Geotomus Lethieryi* SIGN. (MNHN); Java, Batavia [=Jakarta], 1 female, ex coll. FRUHSTORFER (IRSNB); Java, Buitenzorg: 1 male 1 female, Dr. O. WARBURG leg., ded. 24.XI.1890 (ZIZM), 5 females 3 males (IRSNB, JAL); Java, Mons Gede, 4000', 1 male VIII 1892 (IRSNB), 8000', 2 females 1 male Aug. 1892, FRUHSTORFER, Muséum Paris (MNHN); Java, Pons Tjikoran, 4000', 1 female 1 male 1892, H. FRUHSTORFER, Muséum Paris, coll. NOUALHIER (MNHN); Java, Pongalengan, 4000', 1893, H. FRUHSTORFER: 2 males (ZIZM), 6 females 2 males, det. as *Cydnius vicinus* SIGN. (IRSNB,

JAL), 2 females, Muséum Paris, coll. E. NOUALHIER (MNHN); Java, Palabuan, 4 females 3 males, coll. NOUALHIER 1898, Muséum Paris (MNHN, JAL); Java, Preanger, 3 males, coll. NOUALHIER 1898, Muséum Paris (MNHN); Java, Tjibulan near Bogor, 1 female 16 IV 1959, B. PISARSKI and J. PROSZYNSKI, 5873 (IZPAS); Java, Palaboehan Ratoe: 1 female, E. CORDIER, 30 V 1908, coll. C. de BÉARN 1909, Muséum Paris (MNHN), 1 female 1 male 30 V 1908, E. CORDIER, coll. Clesse de BÉARN 1909, Croisière du "Nirvana", Muséum Paris (MNHN); Java, Dampit, Soember Pakel, 30 females 16 males 1919-1920, Mac GILLAVRY, Coll. Dr. D. Mac GILLAVRY (ZMA, JAL); Java, Delanggoo, 23 females 31 males 1927, Coll. Dr. D. Mac GILLAVRY (ZMA, JAL); Java, Weliri Piellen, Siloewok Sawangan, 2 females 3 males, Mac GILLAVRY 1925, Coll. Dr. D. Mac GILLAVRY (ZMA); Java, Banjoewangi, 8 females 6 males 1910, Mac GILLAVRY, Coll. Dr. D. Mac GILLAVRY (ZMA, JAL); Java, Banjoewangi, 2 males 931, Lucht (ZIP); Java, Soekaboemi, 1 female, Mrs WALSH, 1916-120 (BMNH); Java, Parabu hanratus, S. KÜSTER, 1 male 3.X.1924, Sammelreise Prof. Dr. H. WINKLER, ded. 1924-1925 (ZIZM); Narvada-Lombok, Sunda Exp. 6 females 3 males 14.3.27, RENSCH, HEDICKE det. 1946, Zool. Mus. Berlin (MNHN); Buru, Station 1, 1 male 10.II-16.III.21, L.J. TOXOPEUS, Coll. Dr. D. Mac GILLAVRY (ZMA); Borneo, 1 female, det. as *Geotomus Lethierryi* SIGN. (MNHN), Borneo, 1 female (MNHN); Borneo, Pontianak, 6 males, R. OBERTHUR 1898, Muséum Paris (MNHN, JAL); Borneo Occ. Setipas, 1 female, J.B. LEDRU 1897, ex coll. OBERTHUR (IRSNB); Nord-Borneo, 1 female, ex Coll. FRUHSTORFER (HNHM); Tandjong, Südost-Borneo, 1 female, Fritzy SUCK, ded. 31.XII.1895 (ZIZM); Borneo, Kapuas b. Sekadau, 1 male 1 female 3.11.1924, Sammelreise Prof. Dr. H. WINKLER, ded. 1924-1925 (ZIZM); Borneo, Nanga Serawai, 3 males 4 females 12-18.11.1924, Sammelreise Prof. Dr. H. WINKLER, ded. 1924-1925 (ZIZM); Borneo, Lebang Hara, 1 female 25.11.-5.12.1924, Sammelreise Prof. Dr. H. WINKLER, ded. 1924-1925 (ZIZM); Celebes, Makassar, 5 females 3 males, O. BECCARI (IRSNB, NHMW, JAL); S. Celebes, Patuhuang, 1 male, Staudinger & Bang-Haas (ZIP); S. Celebes, Samanga, 4 females 5 males Nov. 1895, H. FRUHSTORFER (IRSNB, HNHM, NHMW, ZIP, ZIZM); S. Celebes, Patutivang, 1 female Jan. 1896, H. FRUHSTORFER (HNHM); N. Celebes, Kota Mobagu, Donau Mogat, 1 female 1 male 1-7 V 1985, Dumoga-Bone, Toraut Base Camp, 2 females 13 IV 1985, 2 females 1 male 21 V 1985, Project WALLACE, M.E. FRANCISCOLO, Museo Civico di Genova (MCSN); Sulawesi Utara, Dumoga-Bone Nat. Park: Base Camp (200m), 20-X-1985, Station: 039, 57 females 55 males; Picnic Site, 12-X-1985, Station: 023, 3 females 3 males; along river Tumpah, 7-X-1985, Station: 004, 2 females; Toraut Base Camp (200m), X-1985, Station: 058, 1 female 1 male; river Tumpah (Picnic S.), X-1985, Station: 012, 1 female; Toraut, X-1985, Station: 003, 1 female, Project WALLACE (IRSNB, JAL); Sulawesi Utara, Dumoga-Bone N.P., R.Ent.Soc.Lond., Project WALLACE, B.M. 1985-10: 6 males 6 females April 1985 Base camp ca 190m, 3 males 10 females March 1985 Lowland forest edge ca 200m, 5 males 3 females 30 March 1985 Ridge above Tumpah River at light (BMNH, JAL); Indonesia, Sulawesi Utara, Dumoga-Bone N.P., 1 male 10 Aug. 1985, Coll. Chen YOUNG, Base Camp 211m, Project WALLACE (CMNH); RMNH/pw 31, N. Sulawesi, Dumoga Bone NP, Malibagu Rd, alt. m 0110, 3 females 19-20.xi.1985, J. KRIKKEN, multistr evergr forest edge, at light (RNH); N. Sulawesi, Lake Tandano, 1 female 10.I.85, R.Ent.Soc.Lond., Project WALLACE, B.M. 1985-10 (BMNH); S. Celebes, Patunuang, Jan. 1896 1 female 2 male, H. FRUHSTORFER (IRSNB, NHMW, ZIZM); Sulawesi Tenggara, Boroboro nr Kendari, 2 males 26.X.1989, J.P. DUFFELS, Sample Sul. 23, Severely disturbed forest, secondary growth, at light (ZMA); Sulawesi Tengah, Luwuk-Biak-poh Road at km 25, 10km N of Biak, 300 m, 2 females 8.X.1989, Sample Sul. 4, J.P. DUFFELS, disturbed rainforest along river, at light (ZMA); Indonesia, Kuta Beach, Bali I., 1 male 9.XII.1977, Shinji NAGAI leg., at light (NSMT); Moens, Ceram, 1 female, No. 12, cotypus, *pygmaeus* DALL., *Geotomus pallidicornis* VOLL., Mus. Leiden, Museum Leiden, *Geotomus pygmaeus* DALL. (RNH); Semmel, Bezoeki. i., 3 females 1 male, No. 8, cotypus; *pallidicornis* = *pygmaeus* DALLAS, Mus. Leiden, *Geotomus pallidicornis* VOLL., Mus. Leiden, *Geotomus pygmaeus* (RNH); Semmel, Bezoeki, 3 males 1 male, cotypus, No. 9, Mus. Leiden, *Geotomus pallidicornis* VOLL., Museum Leiden, *Geotomus pygmaeus* (RNH).

CHAGOS ARCHIPELAGO: Diego Garcia, Eclipse point, at light, 1 male 8.IV.1971, 2 females 2 males 1.IV.1971; Diego Garcia, Camp Marcel, 8 females 4 males 10.V.1971, open coconut grove, at light; Diego Garcia, Roche Point, 6 females 5 males 29.IV.1971, at light; Diego Garcia, Minni Minni, 1 female 5 males 14.V.1971, at light; Diego Garcia, East point, 2 females 8.V.1971, at light, A.M. HUTSON, B.M. 1971-346 (BMNH, JAL).

MALDIVE ISLANDS: Malediv Isl., Gan. I. Addu Atoll, 1 female 1 male 9.X.1958, 1 female 25. VIII. 1958, flying at dusk near lagoon, W. W. A. PHILLIPS, B.M. 1958-113, B.M. 1958-635, British Museum (BMNH, JAL).

CHRISTMAS ISLANDS: Christmas I., C.W. ANDREWS, 1 male Avril 1898, 98-20, det. as *Aethus nitens*, 1 female 98-20, North Coast, Dec. 1897 (BMNH); Christmas I., 1 female 2 males 1906-66, Dr. C.W. ANDREWS (BMNH, JAL).

DISTRIBUTION. - Burma, Brunei, Cambodia, China (Sichuan, Guangdong, Hainan, Guangxi, Yunnan, Jiangxi, Hubei, Taiwan), Chagos Archipelago, Christmas Islands, Cocos-Keeling Islands, Hong Kong, India (incl. Andamans and Nicobars), Indonesia, Laos, Malaysia, Maldive Islands, Nepal, Pakistan, Philippines, Singapore, Sri Lanka, Thailand, Vietnam.

The most common Cydnidae species; recorded also from Korea, Japan, the

Australian Region, numerous islands of Pacific, as well as Saudi Arabia and Iraq.

**BIOLOGICAL DATA.** - MILLER (1971) found this species among rice seedlings; he also reported it to be a facultative blood sucker (MILLER, 1931, 1971). The species was found on roots of *Glycine*, *Trifolium* (*Leguminosae*) (KOBAYASHI, 1964, 1974, 1981), and in fallen seeds of *Graminae* (KOBAYASHI, 1974) in Japan. ZIMMERMANN (1948) recorded it on *Paspalum limbriatum* (*Graminae*) from Hawaii. Box (1953) reported it as a sugar-cane insect from Formosa and Hawaii.

Among examined specimens some have been collected "under stones, from dung", from "rotting banana stump", "along river", "flying at dusk near lagoon", from "*Quercus* forest, bushes near village", and "at light" in different types of a tropical forest, as well as different tree-plantations.

**REMARKS.** - DISTANT (1899a: 222) proposed *Aethus platysomoides* WALKER and *A. omicron* WALKER to synonymize with *F. pygmaeus* (DALL.). I have studied the type specimens of both former species, and found them not conspecific with the latter (Lis, unpublished); the two species are therefore removed from the synonymy of *F. pygmaeus*.

Specimens determined as *Geotomus pygmaeus* by AHMAD et al. (1979) as well as by MOIZUDDIN & AHMAD (1990) pertained to *Alonipis acrostictus*.

### Genus *Gampsotes* SIGNORET

*Gampsotes* SIGNORET, 1882a: XXIX.

**DIAGNOSIS.** - The very long rostrum (surpassing the VIIth abdominal sternite), the serrated costal margins and the elongated body (about 2.5-2.8 times longer than broad) will define this genus.

**DESCRIPTION.** - Body parallel-sided (fig. 311), about 2.5-2.8 times longer than broad.

Head elongated; clypeus free, with a subapical pair of hair-like setae; each paraclypeus with a row of submarginal setigerous punctures; eyes moderately large, each without the apical spine; ocelli present; antennae 5-segmented, slender and long; rostrum very long, surpassing the VIIth abdominal sternite.

Pronotum almost rectangular in outline, broader than long; anterior margin deeply angularly insinuated, the posterior almost straight; each lateral margin with a submarginal row of hair-like setae; umbones not swollen.

Scutellum distinctly longer than broad; basal and lateral rows of punctures well developed; apex elongated, tongue-like.

Corium long, divided into clavus, meso- and exocorium; clavus with 3 rows of punctures; mesocorium with two rows of punctures paralleling clavo-corial suture; costal margins distinctly serrated, with short hair-like bristles; membranal suture slightly sinuated; membrane varying in length, usually slightly surpassing the tip of abdomen.

Propleural depression shallow; evaporative areas on meso and metapleuron large, conspicuous; apex of peritreme with small process on the posterior margin.

Abdominal sternites densely and coarsely punctured.

Anterior tibiae expanded, tarsus arising at its apex, margins with strong spines; middle and posterior tibiae slender, slightly flattened, spined on margins.

Male genitalia of the geotomine type.

TYPE OF GENUS. - *Gampsotes parallelus* SIGNORET, 1882, by monotypy.

***Gampsotes parallelus* SIGNORET**

(figs. 311-314)

*Gampsotes parallelus* SIGNORET, 1882a: XXIX, 1882e: 243; ATKINSON, 1887: 52; LETHIERRY & SEVERIN, 1893: 69; DISTANT, 1901a: 101, 1902: 94; LIS, 1991b: 180.

DIAGNOSIS. - This is the only known species of the genus.

DESCRIPTION. - Body elongated (fig. 311), from yellowish brown to blackish brown.

Head, except apical half of clypeus, distinctly punctured; the latter broadened apicad, slightly longer than paraclypei, subapically with a pair of long hair-like setae; each paraclypeus with a row of 5-8 submarginal hair-like setae; eyes from dark brown to blackish brown, ocular index 2.80-3.60; ocelli orange or reddish brown, interocellar index 6.0-8.0; rostrum very long, surpassing VII sternit, 2nd rostral segment with small foliaceous lobe.

Pronotum distinctly punctured, punctures distinctly larger than those on head, posterior margin and calli impunctate, the latter slightly elevated; each lateral margin with 3 submarginal setigerous punctures.

Scutellum, except anterolateral angles and sometimes also the basal fifth, densely punctured, punctures slightly smaller than those of pronotum.

Corium with punctures somewhat smaller than those on pronotum; clavus with one complete and two partial rows of punctures; mesocorium with two rows of punctures paralleling clavo-corial suture, mesocorial disc almost evenly punctured; exocorium sparsely punctured; costal margins distinctly serrated (fig. 312), without setigerous punctures, but with short hair-like bristles.

Propleuron with a few punctures in depression; evaporatoria large, apex of peritreme as in fig. 313.

Paramere as in fig. 314.

Measurements (male and female respectively): body length 5.20-5.31, 5.50-6.25; body width 2.05-2.12, 2.20-2.27; head length 0.75-0.87, 0.85-0.98; head width 1.17-1.20, 1.20-1.30; pronotum length 1.20-1.37, 1.40-1.54; pronotum width 2.05-2.07, 2.18-2.24; scutellum length 1.93-1.97, 2.02-2.15; scutellum width 1.27-1.28, 1.35-1.46; antennal segments: 0.24-0.29 : 0.31-0.35 : 0.38-0.42 : 0.59-0.63 : 0.73-0.81, 0.28-0.30 : 0.32-0.38 : 0.44-0.48 : 0.64-0.67 : 0.75-0.91.

TYPE MATERIAL EXAMINED

Lectotype female of *Gampsotes parallelus* SIGNORET (present designation): [INDIA]: India or.; *parallelus* SIGN., type (HNHM).

Paralectotypes: 3 females: [INDIA]: the same data as the holotype (HNHM).

OTHER MATERIAL EXAMINED (13 males, 22 females)

INDIA: 1 male, Zool. Mus. Helsinki (ZMHU); Indes Or., 1 male, det. as *Gampsotes parallelus*, Mus. Paris (MNH).

BURMA: Bhamó, 2 females 1 male VIII 1885, FEA (IRSNB, JAL); Birmania, Kathá, VI 1885, FEA: 1 female 1 male (IRSNB), 2 females 3 males, Muséum Paris, A.L. MONTANDON 1897, det. as *Gampsotes parallelus* SIGN. (MNH), 2 females 1 male, Museo Civico di Genova (MCSN), 1 female, det. as *Gampsotes* (ZIZM), 1 female 1 male (JAL), 1 female, DISTANT Coll. 1911-383 (BMNH), 1 male 6 females, det. as *Gampsotes parallelus* SIGN. by OSHANIN (ZIP); Toungoo, 1 female 1 male V-X.88, L. FEA, Museo Civico di Genova, det. as *Gampsotes parallelus* SIGN. by DISTANT (MCSN); Tenasserim, 1 male, FRUHSTORFER, det. as *Gampsotes parallelus* (NhMW); Rangoon, Birmania: 1 female V-VII 1887, FEA, Museo Civico di Genova, det. as *Gampsotes parallelus* SIGN. (MCSN), 1 female, C.J. BLIGH, DISTANT Coll. 1911-383 (BMNH); Birma, 1

male 2 females, Leonardo FEA leg., vend. 1.1.1895 (ZIZM); Birmania, Schwegoo-Myo, 1 female Feb. Ottobre 1885, Distant Coll. 1911-383 (BMNH).

DISTRIBUTION. - India, Burma.

### Genus *Geopeltus* Lis

*Geopeltus* Lis, 1990b: 226.

DIAGNOSIS. - This genus differs from all Oriental genera of *Geotomini*, except *Adrisa*, in the 4-segmented antennae. It can be easily distinguished from representatives of the genus *Adrisa* by the presence of distinct deep sculpture on the pronotum and the scutellum (fig. 315), by the triangular head bearing no ocelli (fig. 316), and by the shape of evaporatoria (figs. 319).

DESCRIPTION. - Head in outline triangular, densely and coarsely punctured; paraclypei longer than clypeus, not joined in front of the latter; lateral margins with a submarginal row of setigerous punctures; clypeus with two subapical setigerous punctures; eyes rounded, protruding, ocelli absent; antennae 4-segmented, 2nd segment longest (fig. 317).

Pronotum wider than long, each lateral margin with a row of submarginal setigerous punctures; disc densely and coarsely punctured with characteristic deep furrows.

Scutellum long, almost equal in length to corium, apex acute; disc with furrows and tuberosities.

Corium reaching  $3/4$  length of abdomen, both clavo-mesocorial and meso-exocorial sutures incomplete; costal margins basally slightly insinuated, without setigerous punctures; membrane reduced, almost indistinct.

Propleuron with shallow impression; evaporatoria large, conspicuous, evaporative areas with deep, hole-like punctures.

Sternites covered with short hair-like bristles.

Posterior tibiae almost cylindrical (fig. 318), the 2nd tarsal segment shortest; fore tibiae somewhat compressed and dilated distally, with spines on dorsal margin.

TYPE OF GENUS. - *Geopeltus tuberculatus* Lis, 1990, by original designation.

### *Geopeltus tuberculatus* Lis

(figs. 315-319)

*Geopeltus tuberculatus* Lis, 1990b: 227.

DIAGNOSIS. - This is the only species known to belong to the genus.

DESCRIPTION. - Body black, dorsal surface with conspicuous sculpture.

Head (fig. 316) black, dorsally distinctly punctured on the entire surface; clypeus slightly shorter than paraclypei, subapically with two setigerous punctures; each lateral margin with a row of 5 setigerous punctures bearing short hair-like setae; eyes rounded, brown, projecting beyond lateral margins of head, ocular index 3,9; ocelli absent; antennae brown; rostrum brown, reaching anterior margin of posterior coxae, 3rd rostral segment longer than 4th.



Pronotum (fig. 315) wider than long, distinctly punctured, disc with characteristic symmetrical sculpture (broad and deep furrow posteriorly, tuberosities medially and laterally); anterior margin deeply sinuated, lateral ones slightly insinuated behind the middle, submarginally with at least 5 almost indistinct setigerous punctures; posterolateral lobes covered with short, brown hair-like bristles.

Scutellum very long (fig. 315), distinctly punctured, apex acute; anterolateral parts with distinct tuberosities.

Corium slightly longer than scutellum; mesocorium evenly punctured, and with two partial rows of punctures paralleling clavo-corial suture; the latter incomplete, reaching neither the membranal suture nor the lateral margin of scutellum; clavus and exocorium with weaker puncturation; membrane reduced, very short, brown.

Dorsum punctured, covered with short hair-like bristles; connexivum of three last segments with posterolateral tubercles.

Propleuron with a few deep, hole-like punctures in depression; evaporatoria as in fig. 319, blackish grey in colour.

Sides of venter punctured; sternites covered with short, brownish hair-like bristles.

Anterior tibiae dilated distally, dorsal margin with 6 spines; hind tibiae almost cylindrical (fig. 318), with spines varying in length; tarsi brown, 2nd segment shortest.

Measurements (female only): body length 6,34; body width 3,74; head length 1,22; head width 1,71; pronotum length 1,90; pronotum width 3,58; scutellum length 2,95; scutellum width 2,17; antennal segments 0,46; 0,81; 0,51; 0,66.

#### TYPE MATERIAL EXAMINED

Holotype female of *Geopeltus tuberculatus* Lis: [SRI LANKA]: Ceylan, VI 1889, H. FRÜHSTORFER; *Geopeltus tuberculatus* Lis, det. J.A. Lis; Holotype (JAL).

DISTRIBUTION. - Sri Lanka.

BIOLOGICAL DATA. - I did not mention in the original description (Lis, 1990b) that the holotype specimen was entirely covered with small clots of soil; it may suggest that the species lives deep in the ground.

### Genus *Geotomus* MULSANT & REY

*Geotomus* MULSANT & REY, 1866: 324.

DIAGNOSIS. - Among those genera with the 5-segmented antennae this genus is best diagnosed by the lobe like, edentate apex of peritreme with the opening on its ventral surface, the head with hair-like setae in a submarginal row on each paraclypeus (peg-like setae are never present), the conspicuous evaporatoria occupying about a half of the meso- and metapleural surface, and by not swollen umbones making the posterolateral margins of the pronotum visible from a dorsal view.

DESCRIPTION. - Body elongately ovate, moderately convex.

Head broader than long, punctured, margins rounded; clypeus free, usually as long as paraclypei, its subapical part with or without a pair of hair-like setae; each paraclypeus with 2-5 (sg. *Geotomus*) or 10-12 (sg. *Barbaraethus*) submarginal setigerous punctures bearing hair-like setae; eyes from small to moderately large,



usually narrow, each with an apical spine; ocelli present, well developed; antennae 5-segmented.

Pronotum broader than long, narrowed anteriorly, disc undivided into lobes; calli smooth; anterior margin angularly insinuated, the posterior almost straight; umbones not swollen; each lateral margin with a row of 4-8 (sg. *Geotomus*) or more than 20 (sg. *Barbaraethus*) submarginal setigerous punctures.

Scutellum longer than broad; disc distinctly punctured, except for anterolateral angles; basal and lateral rows of punctures distinctly developed; apex tongue-like, elongated.

Corium divided into clavus, meso- and exocorium; clavus with rows of punctures; mesocorium with two rows of punctures paralleling clavo-corial suture, mesocorial disc almost evenly punctured; costa with 0-2 (sg. *Geotomus*) or 12-20 (sg. *Barbaraethus*) setigerous punctures; membranal suture almost straight, only slightly insinuated; membrane well developed, reaching or surpassing the tip of abdomen.

Propleural depression, sometimes also anterior convexity with distinct punctures; evaporatoria occupying about a half of meso- and matapleuron, peritreme with lobe-like apex, the opening on ventral side (fig. 321).

Sternites punctured or transversely wrinkled laterally.

Anterior tibiae distally expanded, not produced beyond the tarsal insertion, marginally with numerous spines and setae; middle and posterior tibiae slightly compressed, especially the dorsal side.

Male genitalia of the common geotomine type.

TYPE OF GENUS. - *Cydnus punctulatus* COSTA, 1847, subsequent designation by DISTANT, 1902.

REMARKS. - Numerous Oriental species previously placed in the genus *Geotomus* pertained actually to either *Alonips* or *Fromundus*.

#### Key to subgenera of *Geotomus*

1. Larger species, evidently exceeding 5.0 mm in length; body margins with numerous hair-like setae (10-12 on each paraclypeus, more than 20 on each lateral margin of pronotum, 12-20 on costa); theca strongly produced apically, forming large, sclerified elongated process (fig. 323) . . . . . ***Barbaraethus*** (p. 191)
- . Smaller species, not exceeding 5.0 mm in length; body margins with several hair-like setae only (2-5 on each paraclypeus, 4-8 on each lateral margin of pronotum, 0-2 on costa); theca slender, normally developed . . . . . ***Geotomus*** (p. 193)

#### Subgenus *Barbaraethus*, new subgenus

DIAGNOSTIC CHARACTERS. - Body larger, more ovate; each paraclypeus submarginally with a row of 10-12 hair-like setae; each lateral margin of pronotum with more than 20 hair-like setae; costal margin with 12-20 setigerous punctures; theca strongly produced apically forming sclerified elongated process (fig. 323).

TYPE OF SUBGENUS. - *Cydnus perpunctatus* SIGNORET, 1881.

***Geotomus (Barbaraethus) perpunctatus* (SIGNORET), new combination**  
(figs. 320-324)

*Cydnius? perpunctatus* SIGNORET, 1881a: 634.

*Cydnius perpunctatus*: LETHIERRY & SEVERIN, 1893: 67; DISTANT, 1901a: 101 [part], 1902: 93.

*Aethus? perpunctatus*: SIGNORET, 1882c: 34.

*Aethus perpunctatus*: ATKINSON, 1887: 48; MOIZUDDIN & AHMAD, 1990: 312.

*Geotomus nigretus* [! ] AHMAD, MOIZUDDIN & KHAN, 1979: 14, 18, nomen nudum.

*Geotomus nigratus* MOIZUDDIN & AHMAD, 1990: 321, new synonym.

Misidentification: DISTANT, 1901a: [part].

**DIAGNOSIS.** - This is the only known species of the subgenus.

**DESCRIPTION.** - Body (fig. 324) from blackish brown to black, corium usually more brownish than pronotum and scutellum.

Head densely punctured except anterior two thirds of clypeus and the posterior margin; clypeus rugulose, as long as paraclypei, medially broadened, subapically without setigerous punctures; each paraclypeus with a row of 10-12 submarginal setigerous punctures bearing long hair-like setae (fig. 320); eyes small and narrow, red, reddish brown or dark brown, ocular index 3.80-4.90; ocelli small, of the same colour as eyes, interocellar index 2.5-4.0; antennae dark brown; rostrum brown, reaching middle coxae.

Pronotum densely and coarsely punctured, with exception of calli; anterior margin deeply angularly insinuated; each lateral margin with numerous (more than 20) long setae.

Scutellum densely and evenly punctured, with exception of anterolateral angles and sometimes also a narrow middle line extending from base to apex.

Corium with puncturation weaker than that of pronotum and scutellum; clavus with one complete and two partial rows of punctures, basal part with a single long hair-like setae; mesocorium with two rows of punctures paralleling clavo-corial suture, mesocorial disc almost evenly punctured; exocorium broad, evenly punctured; costa with 12-20 setigerous punctures; membrane distinctly surpassing the posterior extremity of abdomen, milky brown with dark brown reticulated veins and dark patches between them.

Anterior convexity and depression of propleuron distinctly punctured; posterior convexity striated; evaporatoria conspicuous, apex of peritreme lobe-like, lateral areas and lamella distinctly coarsely punctured (fig. 321).

Sternites brownish black, glossy in the middle, sides distinctly wrinkled and punctured; lateral margins with hair-like setae.

Legs blackish brown, not specifically modified.

Paramere as in fig. 322, theca dorsally with additional sclerified process (fig. 323).

Measurements (male and female respectively): body length 5.80-6.10, 6.00-6.40; body width 3.34-3.67, 3.67-3.80; head length 0.88-1.02, 0.99-1.12; head width 1.43-1.52, 1.38-1.48; pronotum length 1.90-2.08, 1.95-2.12; pronotum width 3.15-3.36, 3.48-3.50; scutellum length 2.28-2.32, 2.25-2.39; scutellum width 2.06-2.15, 2.05-2.18; antennal segments: 0.26-0.28 : 0.34-0.35 : 0.28-0.31 : 0.42-0.44 : 0.38-0.40, 0.28-0.31 : 0.38-0.41 : 0.34-0.35 : 0.43-0.46 : 0.38-0.42.

**TYPE MATERIAL EXAMINED**

Lectotype female of *Cydnius perpunctatus* SIGNORET (present designation): [INDIA]: Khandalla; Typus; *perpunctatus* SIGN., Kandalla; *perpunctatus* SIGN.; *Cydnius? perpunctatus* SIGN. Typus!; Museo Civico di Genova (MCSN).

Holotype male of *Geotomus nigratus* MOIZUDDIN & AHMAD: [PAKISTAN]: Host: Grass, Loc. Tandojam,

Date: 2.2.75, Coll. MOIZ.; *Geotomus nigratus* MOIZUDDIN & AHMAD 1990; Holotype (NHMUK).

OTHER MATERIAL EXAMINED (10 males, 9 females)

PAKISTAN: Sind, Kurrachee, 1 female 1 male, M. MAINDRON, Muséum Paris, coll. NOUALHIER 1898, det. as *Cydnus indicus* Ww. by We-I YANG (MNHN, JAL); Muséum Paris, Kurrachee, 4 males 1 female (Aout-Sept.), MAINDRON 133-96, det. as *Lactistes* sp.? (MNHN, JAL); Pakistan, Umg. Karachi, 2 males 2 females 22.-30.9.1972, Ig. HEISS, det. as *Aethus* ?, det. SEIDENSTÜCKER 1973 (EHC, JAL).

INDIA: Matheran pres Bombay, 4 females, M. MAINDRON, Muséum Paris, coll. NOUALHIER 1898, det. as *Cydnus indicus* Ww. by We-I YANG, 1935 (MNHN, JAL); S. Mysore, 1 male, 3300Ft, Goorghalli Estate, 14:2:Mar.13, P.S. coll. (JAL).

BURMA: Palon, Pegu, L. FEA, VIII.IX.87, 1 female, Museo Civico di Genova, det. as *Cydnus indicus* by DISTANT (MCSN), 2 males, det. as *perpunctatus*, DISTANT coll., 1911-383 (BMNH).

DISTRIBUTION. - South Pakistan, India, Burma.

BIOLOGICAL DATA. - The species was reported from Pakistan as being found under roots of grasses (AHMAD et al., 1979; MOIZUDDIN & AHMAD, 1990).

### Subgenus *Geotomus* s. str.

DIAGNOSTIC CHARACTERS. - Body smaller, more elongate; each paraclypeus with a row of 2-5 submarginal hair-like setae; each lateral margin of pronotum with 4-8 submarginal setigerous punctures; costal margin either without or with 1-2 setigerous punctures; theca slender, its apical part without a modification.

TYPE OF SUBGENUS. - *Cydnus punctulatus* COSTA, 1847.

#### Key to species of *Geotomus* s. str.

1. Evaporatorium of metapleuron with elevated and polished transverse band reaching the apex of peritreme (fig. 326) ..... *coimbatoreicus* (p. 194)
- Evaporatorium of metapleuron without transverse polished band (figs. 327, 328) .... 2.
2. Clypeus subapically with a pair of hair-like setae; costa with 1-2 setigerous punctures; 3rd antennal segment longer than the 2nd; evaporatoria larger (fig. 327) ..... *convexus* (p. 193)
- Clypeus and costa without setigerous punctures; costa without setigerous punctures; 3rd antennal segment shorter than the 2nd; evaporatoria smaller (fig. 328) ..... *hildegardae* (p. 195)

### *Geotomus (Geotomus) convexus* HSIAO

(fig. 327)

*Geotomus convexus* HSIAO in HSIAO et al., 1977: 47 & 296; LIS, 1994: 115.

*Geotomus palliditarsis* [sic!], not of SCOTT, 1880: JOSIFOV & KERZHNER, 1978: 189; KANYUKOVA, 1988: 916.

DIAGNOSIS. - The species can be easily separated from the others within the subgenus by the presence of a pair of subapical hair-like setae on the clypeus.

DESCRIPTION. - Head black or blackish brown, dorsally punctured except for clypeus and vertex; clypeus as long as or slightly shorter than paraclypei, subapically with two setigerous punctures; each paraclypeus with a row of 3-5

submarginal hair-like setae; eyes brown or reddish brown, ocular index 3.10-3.50; ocelli reddish brown, interocellar index 5.5-7.5; antennae dark brown, segments apically paler; rostrum brown, reaching middle coxae.

Pronotum castaneous, blackish brown or almost black; disc punctured; each lateral margin with a row of 6-8 submarginal setigerous punctures.

Scutellum of the same colour as pronotum, evenly and densely punctured, except for basal part and anterolateral angles; punctures of the same size as those on pronotum.

Corium of the same colour as scutellum, sometimes mesocorium more brownish; clavus with one complete and two partial rows of punctures; mesocorium and exocorium evenly punctured, mesocorium with two rows of punctures paralleling clavo-corial suture; costa with 1-2 setigerous punctures; membrane semihyaline, browned, distinctly surpassing the tip of abdomen.

Propleuron dark castaneous or brownish black, polished, depression with a few punctures; evaporative areas on meso- and metapleuron large, apex of peritreme lobe-like (fig. 327).

Sternites castaneous or dark castaneous, glossy in the middle, sides wrinkled and sparsely punctured.

Legs of the same colour as abdomen, without specific modifications; tarsi yellowish brown.

Paramere and genital capsule figured by JOSIFOV & KERZHNER (1978) and KANYUKOVA (1988).

Measurements (male and female respectively): body length 4.39-4.45, 4.27-4.90; body width 2.37-4.41, 2.28-2.50; head length 0.65-0.66, 0.60-0.66; head width 1.06-1.08, 1.08-1.15; pronotum length 1.15-1.27, 1.27-1.44; pronotum width 2.19-2.25, 2.19-2.44; scutellum length 1.75-1.76, 1.75-1.78; scutellum width 1.41-1.60, 1.44-1.49; antennal segments: 0.17-0.21 : 0.23-0.25 : 0.29-0.31 : 0.35-0.40 : 0.38-0.42, 0.20 : 0.24 : 0.29 : 0.36 : 0.45.

#### TYPE MATERIAL EXAMINED

Paratype male of *Geotomus convexus* HSIAO: [CHINA]: Tientsin, China, 1953.IV.22; Paratype; *Geotomus convexus* HSIAO, 1977, Paratype (DBNU).

#### OTHER MATERIAL EXAMINED (4 males, 7 females)

CHINA: Chine, Nan King [=Nanjing], 6 females 1 male, J. de JOANNIS 1908, Muséum Paris, det. as *Geotomus pygmaeus* DALL. by We-I YANG 1935 (MNHN, JAL); China, 1 male, det. as *Geotomus pygmaeus* (HNHM); China, Tientsin, 1 female 2 male July 1902, F.M. THOMSON, 1904-229 (BMNH, JAL).

DISTRIBUTION. - China (Nanjing, Beijing, Liaoning, Tianjin).

Recorded also from Korea and the Far East territory of Russia.

REMARKS. - This is the only East Palaearctic representative of the genus (see also LIS, 1994).

### ***Geotomus (Geotomus) coimbatoricus*, new species**

(fig. 326)

DIAGNOSIS. - The evaporatorium of the metapleuron with a transverse polished and elevated band reaching the apex of peritreme will separate this species from the others within the subgenus.

DESCRIPTION. - Body from pale brown to dark castaneous.

Head impunctate, alutaceous, sometimes slightly wrinkled; clypeus as long as

paraclypei, without subapical setigerous punctures; each paraclypeus with 2 submarginal hair-like setae; eyes dark brown or blackish brown, ocular index 3.30-3.90; ocelli brown or reddish brown, interocellar index 8.0-13.0; antennae pale brown or brown; rostrum brown, surpassing middle coxae.

Pronotum almost impunctate, only laterally with a few tiny punctures; each lateral margin submarginally with a row of 4-5 setigerous punctures.

Scutellum sparsely punctured, basal part and apex impunctate.

Corium punctured, punctures smaller than those on scutellum; clavus with one complete and one partial row of punctures; mesocorium with two rows of punctures paralleling clavo-corial suture, mesocorial disc weakly punctured; costa with 1 setigerous puncture; membrane slightly browned, surpassing the tip of abdomen.

Prosternum alutaceous, impunctate; depression impunctate or with a few punctures; evaporatoria large, that of metapleuron with transverse polished band reaching the apex of peritreme (fig. 326).

Sternites glossy in the middle, laterally punctured.

Legs not specifically modified.

Measurements (male and female respectively): body length 3.27-3.68, 3.09-3.66; body width 1.76-1.93, 1.65-1.90; head length 0.52-0.56, 0.49-0.54; head width 0.77-0.84, 0.75-0.80; pronotum length 1.01-1.09, 0.94-1.04; pronotum width 1.58-1.83, 1.56-1.81; scutellum length 1.30-1.54, 1.33-1.51; scutellum width 1.01-1.20, 0.98-1.17; antennal segments: 0.21-0.23 : 0.26-0.31 : 0.24-0.31 : 0.31-0.42 : 0.41-0.48, 0.18-0.22 : 0.24-0.27 : 0.24-0.28 : 0.35-0.39 : 0.38-0.42.

#### TYPE MATERIAL EXAMINED

Holotype male: [INDIA]: South India, Madras State, Coimbatore, 1400ft., XI-1966, P.S. NATHAN (ZMA).

Paratypes: 2 males 9 females: [INDIA]: South India, Madras State, Coimbatore, 1400ft., XI-1966, P.S. NATHAN (ZMA, JAL); 1 male: [INDIA]: 30-III-14, South India, Coimbatore, O.N. Coll. (JAL); 1 male: [INDIA]: Inde, Deccan, Kurduvadi (JAL); 1 male: [INDIA]: S. India, Mysore, Chikballapur (JAL); 1 male: [INDIA]: Chipurupalle, Vizagapatam Distr., India, R.S. PATUCK, B.M. 1923-430 (BMNH).

DISTRIBUTION. - India.

### ***Geotomus (Geotomus) hildegardae*, new species**

(fig. 328)

DIAGNOSIS. - The absence of setigerous punctures on both the apical part of clypeus and the costa, coupled with the evaporatorium of the metapleuron without a transverse polished band will easily separate this species from the other two of the subgenus.

DESCRIPTION. - Head black, dorsally punctured with exception of clypeus and posterior margin; clypeus as long as paraclypei, broadened in the middle, subapically without setigerous punctures; each paraclypeus with a row of 5 submarginal setigerous punctures bearing hair-like setae; eyes dark brown, ocular index 3.15; ocelli yellowish brown, interocellar index 10.0; antennae dark brown, segments apically paler, 2nd segment longer than the 3rd; rostrum dark brown, surpassing posterior coxae.

Pronotum blackish brown, distinctly punctured with exception of calli and posterior margin, punctures slightly larger than those on head; anterior margin angularly insinuated; each lateral margin with 4 submarginal setigerous punctures.

Scutellum of the same colour as pronotum, disc almost evenly punctured except for the basal fifth; apex narrowly elongated.

Corium more brownish than pronotum and scutellum; clavus with one complete and two partial rows of punctures; mesocorium with two rows paralleling clavo-corial suture, mesocorial disc almost evenly punctured; exocorium sparsely punctured; costa without setigerous punctures; membrane browned, almost reaching the tip of abdomen.

Propleuron with coarse puncturation in depression; anterior convexity alutaceous; evaporatoria conspicuous (fig. 328), but smaller than those of *G. (G.) convexus*, lamella and lateral areas with numerous large punctures.

Sternites blackish brown, lateral three fourths densely coarsely punctured.

Legs dark brown, not specifically modified.

Measurements (female only): body length 3.98; body width 2.12; head length 0.69; head width 0.97; pronotum length 1.10; pronotum width 1.90; scutellum length 1.68; scutellum width 1.24; antennal segments: 0.19 : 0.29 : 0.24 : 0.38 : 5th missing.

#### TYPE MATERIAL EXAMINED

Holotype female: [SINGAPORE]: Singapour, ex coll. R. HOLYNSKI (JAL).

ETYMOLOGY. - The species is dedicated to my Mother, Hildegarda.

DISTRIBUTION. - Singapore.

### Genus *Katakadia* DISTANT

*Katakadia* DISTANT, 1899a: 220.

*Opatrocydnus* BREDDIN, 1900: 289, new synonym.

DIAGNOSIS. - The genus is best diagnosed by the set of following characters: the antennae 5-segmented; the clypeus with two setigerous punctures placed at one fourth of its length from the apex; submargins of the paraclypei with both peg-like and hair-like setae; the postocular part of the head prolonged into a converging "neck"; the anterior margin of the pronotum very deeply emarginated; the apex of peritreme with a hook-like process.

DESCRIPTION. - Body oval, sides subparallel (fig. 325).

Head densely punctured, anteriorly semicircular; clypeus narrow, shorter than and apically covered by paraclypei, with a pair of setigerous punctures at one fourth of its length from the apex; each paraclypeus submarginally with a row of setigerous punctures bearing both peg-like and hair-like setae; eyes large, rounded, each without apical spine; ocelli present, placed close to posterior head margin; posterior half of head prolonged into a converging "neck" (figs. 325, 329); antennae 5-segmented.

Pronotum broader than long, narrowed anteriorly; disc undivided into lobes; anterior margin very deeply and bluntly V-emarginated; posterior margin broadly rounded; umbones not swollen; lateral margins submarginally with setigerous punctures.

Scutellum longer than broad, densely punctured, basal and lateral rows of punctures almost indistinct; apex rounded, slightly elongate.

Corium divided into clavus, meso- and exocorium; clavus with rows of punctures; mesocorium with two rows of punctures paralleling clavo-corial suture, mesocorial disc abundantly punctured; costa with setigerous punctures; membranal suture strongly recurved laterally.



Anterior and posterior convexity of propleuron, as well as depression conspicuously developed; evaporatoria extensive, apex of peritreme with hook-like process on posterior margin (fig. 330), osteole opening posteriorly, basad of a hook-like process.

Sternites punctured. Anterior tibiae flattened and expanded apically, with strong spines on dorsal margin; posterior tibiae broadened and flattened, dorsal and ventral surface unspined, the dorsal with setae, margins with numerous strong spines.

Male genitalia of the geotomine type.

TYPE OF GENUS. - *Aethus caliginosus* WALKER, 1867, by original designation; of *Opatrocydnus*, *Opatrocydnus cryptocephalus* BREDDIN, 1900, by monotypy.

### ***Katakadia caliginosa* (WALKER)**

(figs. 325, 329-331)

*Aethus caliginosus* WALKER, 1867: 161; LETHIERRY & SEVERIN, 1893: 81.

*Katakadia caliginosa*: DISTANT, 1899a: 220; BERGROTH, 1908: 148.

*Katakadia caliginosus*: FROESCHNER, 1960b: 251.

*Opatrocydnus cryptocephalus* BREDDIN, 1900: 289; BERGROTH, 1908: 149, **new synonym**.

DIAGNOSIS. - This is the only known species of the genus.

DESCRIPTION. - Body black, densely punctured with large punctures (fig. 325).

Head (fig. 329) longitudinally depressed on either side between eyes; clypeus slightly rugose, weakly punctured; paraclypei joined in front of clypeus; the latter with a pair of setigerous punctures at one fourth of its length from the apex; each paraclypeus with a row of 10-12 submarginal setigerous punctures (4-5 peg-like setae, 6-8 hair-like setae); eyes pale yellow, ocular index 3.00-3.25; ocelli brown, interocellar index 1.5-1.8; antennae brown, segments apically paler, 2nd segment shorter than the 3rd; rostrum brown, reaching middle coxae.

Pronotum densely punctured, except calli, the latter bilobed laterally; puncturation of disc becoming finer toward posterior margin; each lateral margin with a row of 11-13 submarginal setigerous punctures.

Scutellum with close-set punctures, becoming finer on apical fourth; anterolateral angles impunctate.

Corium with crowded, coarse punctures; costa with 3-5 setigerous punctures; membrane dark brown, reaching to the tip of abdomen.

Propleuron polished; depression with a few coarse punctures posterior to coxae, apical half of anterior convexity with numerous crowded coarse punctures; evaporatoria as defined for genus, lateral area and lamella with coarse punctures, apex of peritreme as in fig. 330.

Sternites with punctures bearing short hair-like bristles; each posterior margin with small teeth.

Paramere as in fig. 331.

Measurements (male and female respectively): body length 7.80-8.25, 8.33-8.85; body width 4.50-4.75, 5.23-5.32; head length 1.49-1.52, 1.56-1.82; head width 1.69-1.79, 1.82-1.96; pronotum length 2.17-3.00, 2.55-3.42; pronotum width 4.35-4.70, 4.93-5.32; scutellum length 2.85-3.02, 3.23-3.30; scutellum width 2.40-2.60, 2.84-3.20; antennal segments 0.46 : 0.29 : 0.46 : 0.59 : 0.70; 0.43-0.48 : 0.30-0.34 : 0.46-0.50 : 0.69 : 0.73.

## TYPE MATERIAL EXAMINED

Lectotype female of *Aethus caliginosus* WALKER (designated by FROESCHNER, 1960b: 252): [MALAYSIA]: Malacca; SAUNDERS 65.13; Type; 81. *Aethus caliginosus*; *Katakadia caliginosus* WALKER (*Aethus*) type; Brit. Mus. Type No. Hem. 287 (BMNH).

## OTHER MATERIAL EXAMINED (1 male, 2 females)

MALAYSIA: Malaya, Kuala Lumpur, 1 male 12-8-1933, Nr. L. GARDENS, coll. H.M. PENDELBURY, Ex F.M.S. Museum, B.M. 1955-354, Allotype, det. as *Aethus*, *Katakadia* Wlk. by R.C. FROESCHNER 60 (BMNH); Perak, 1 female, DOHERTY, *caliginosa* WALK., Distant Coll. 1911-383, det. as *Katakadia caliginosus* WALK. (BMNH); Sabah, Sook, 1500ft, 17m SW Keningau, 1 female 15.VIII.1977, in human faeces (JAL).

DISTRIBUTION. - Malay Peninsula, Borneo (Sarawak), Sumatra.

BIOLOGICAL DATA. - One examined specimen has been found in human faeces.

REMARKS. - The type material of *Opatrocydnus cryptocephalus* BREDDIN (from Sumatra) has not been traced despite repeated efforts; nevertheless the original detailed description of both genus and species leaves no doubts about the identity of the two species, namely *K. caliginosa* and *O. cryptocephalus*. Therefore the genus *Opatrocydnus* BREDDIN is proposed here to synonymize with *Katakadia* WALKER, as well as *O. cryptocephalus* BREDDIN with *K. caliginosa* (WALKER).

### Genus *Lactistes* SCHIÖDTE

*Lactistes* SCHIÖDTE, 1847: 456.

DIAGNOSIS. - The anterior tibiae conspicuously produced beyond the point of tarsal insertion, the lateral margins of the head upcurved, and the paraclypei bearing only hair-like setae in a submarginal row mark this genus as distinct from others within the tribe *Geotomini*.

DESCRIPTION. - Body robust, ovate in outline (fig. 340), dorsally convex.

Head broader than long, wrinkled, in some species also punctured; lateral margins distinctly upcurved; clypeus shorter than paraclypei, sometimes the latter joined in a front of the former; each paraclypeus with 3 submarginal setigerous punctures bearing hair-like setae; eyes prominent, each with apical spine; ocelli present; antennae short, 5-segmented.

Pronotum broader than long, narrowed anteriorly, undivided into lobes; anterior margins insinuated; umbones more or less swollen, in some species concealing posterolateral angles; calli always smooth and elevated; lateral margins with a row of submarginal setigerous punctures.

Scutellum elongated, distinctly punctured; basal and lateral rows of punctures more or less distinct; apex tongue-like.

Corium divided into clavus, meso- and exocorium, punctured; clavus with one complete and two partial rows of punctures; mesocorium with two rows of punctures paralleling clavo-corial suture, mesocorial disc punctured; costa with 1-7 setigerous punctures; membrane semihyaline, usually browned, surpassing the tip of abdomen.

Anterior and posterior convexity of propleuron conspicuously developed, depression deep, usually punctured; evaporatorium on mesopleuron with longer or shorter polished band near the posterior margin, evaporatorium on metapleuron with polished wedge-shaped area directed towards the apex of peritreme; the latter posteriorly with claw-like process (figs. 333, 337, 355).

Sternites smooth, laterally more or less either wrinkled (sg. *Lactistes* s.str.) or punctured (sg. *Eolactistes*).

Anterior tibiae dilated apically, with spines on the entire outer margin in sg. *Eolactistes* (figs. 332, 336), or more or less elongated, narrowed and curved apically with spines present only on basal two thirds of the outer margin in sg. *Lactistes* s.str. (figs. 345, 349, 354); tarsus of anterior tibia never arises apically; posterior tibiae slightly flattened.

Male genitalia of the geotomine type.

TYPE OF GENUS. - *Lactistes vericulatus* SCHIØDTE, 1847, subsequent designation by DISTANT, 1902.

REMARKS. - Members of the genus *Lactistes* share the modification of the anterior tibiae with representatives of the subfamily *Scaptocorinae*, and probably therefore the genus was included in that subfamily by MOIZUDDIN & AHMAD (1990). Nevertheless, representatives of the genus have not swollen posterior tibiae, and a type of trichobothrial arrangement characteristic of the subfamily *Cydninae*.

DOLLING (1981) pointed out that *Lactistes* resembles *Scaptocorinae* not only in the shape of the anterior tibiae, but also in the posterior wing venation. I have examined the latter character in a lot of specimens (of Oriental and African species), and I have found it as typical of the subfamily *Cydninae*. Thus, *Lactistes* should be placed within the *Cydninae*, as it was recently correctly done by LINNAVUORI (1993); the modification of the anterior tibiae ought to be treated as an example of convergency caused by the adaptation for living between roots, deep in the soil.

#### Key to subgenera of *Lactistes*

1. Anterior tibiae dilated in the apical half, with spines on the entire outer margin, apical process short, ending in two stout spines (figs. 332, 336); sternites laterally punctured . . . . . ***Eolactistes*** (p. 199)
- Anterior tibiae more or less prolonged forming a spatulate process, narrowed and curved apically, spines present on basal two thirds of outer margin (figs. 345, 349, 354); sternites impunctate, laterally more or less transversely wrinkled . . . . ***Lactistes*** (p. 202)

#### Subgenus *Eolactistes* LINNAVUORI

*Lactistes* sg. *Eolactistes* LINNAVUORI, 1993: 13.

DIAGNOSTIC CHARACTERS. - Anterior tibiae dilated in the apical half, spines present on the entire outer margin, apical process short and ending in two stout spines; sternites laterally conspicuously punctured, sometimes also wrinkled.

TYPE SPECIES. - *Lactistes incertus* SIGNORET, 1881, by original designation.

#### Key to species of sg. *Eolactistes*

1. Costa with 1-2 setigerous punctures; penis almost straight (fig. 339), paramere as in fig. 338 . . . . . ***truncatoserratus*** (p. 201)
- Costa with 3-7 setigerous punctures; penis distinctly curved (fig. 335), paramere as in fig. 334 . . . . . ***mediator*** (p. 200)

***Lactistes (Eolactistes) mediator* BREDDIN, new combination**

(figs. 332-335)

*Lactistes mediator* BREDDIN, 1909: 260; DISTANT, 1918: 117; GAEDIKE, 1971: 91; LIS, 1991b: 184.

DIAGNOSIS. - The species is related to *L. (E.) truncatoserratus* but it can be easily distinguished from the latter by the presence of 3-7 setigerous punctures on the costa (1-2 in *truncatoserratus*), and by a different shape of the male genitalia (figs. 334-335).

DESCRIPTION. - Body blackish brown or black.

Head wrinkled, and punctured with small punctures; paraclypei joined or almost joined in a front of clypeus, each with 3 submarginal setigerous punctures; eyes brown or blackish brown, ocular index 2.60-3.55; ocelli reddish brown or yellowish brown, interocellar index 5.0-7.0; antennae brown; rostrum brown or brownish black, surpassing middle coxae.

Pronotum with large elevated calli, separated from each other by narrow punctured area; punctures on a disc larger than those on head; each lateral margin with a row of 11-15 submarginal setigerous punctures; umbones only slightly swollen.

Scutellum densely punctured, punctures of the same size as or slightly larger than those on pronotum; basal part and apex almost impunctate.

Corium with rows of punctures of the same size as or larger than those on pronotum; mesocorial disc and exocorium with smaller punctures; costa with 3-7 setigerous punctures; membrane surpassing far the posterior extremity of abdomen, brown with basal part sometimes darker.

Propleuron with distinct punctures in depression, a few present also at basal part of posterior convexity; evaporatoria as in fig. 333.

Sternites laterally punctured and transversely wrinkled; tiny punctures are present also along sutures.

Legs chocolate brown or blackish brown, spines black or blackish brown; anterior tibiae as in fig. 332.

Penis conspicuously curved (fig. 335), paramere as in fig. 334.

Measurements (male and female respectively): body length 5.70-6.65, 6.10-7.00; body width 3.05-3.65, 3.49-3.54; head length 0.78-1.17, 0.95-1.08; head width 1.27-1.51, 1.41-1.47; pronotum length 1.57-2.15, 1.72-2.24; pronotum width 2.75-3.44, 3.15-3.42; scutellum length 2.07-2.36, 2.31-2.54; scutellum width 1.92-2.27, 2.07-2.34; antennal segments: 0.31-0.37 : 0.24-0.26 : 0.29-0.34 : 0.28-0.38 : 0.41-0.45, 0.32-0.34 : 0.24-0.29 : 0.33-0.34 : 0.29-0.38 : 0.41-0.45.

## TYPE MATERIAL EXAMINED

Lectotype male of *Lactistes mediator* BREDDIN (designated by GAEDIKE, 1971: 91): [SRI LANKA]: Bandarawella, Ceylon, HORN; *Lactistes mediator* BREDD. Type!; Lectotypus, des. H. GAEDIKE 1968; DEI Eberswalde (DEI).

Paralectotypes: 1 male, 1 female, 1 larva: [SRI LANKA]: Bandarawella, Ceylon, HORN; *Lactistes mediator* BREDD. Type!; Lectotypus, des. H. GAEDIKE 1968; DEI Eberswalde (DEI).

## OTHER MATERIAL EXAMINED (2 males, 7 females)

INDIA: Maissour, Silvapoor (Mt Tabourel), 5 females 2 males, R. OBERTHUR 1899, Muséum Paris (MNHN, JAL); Kumaon, W. Almora, India, H.G.C., 1 female, CHAMPION Coll., B.M. 1924-409, det. as *Lactistes truncatoserratus* SIGN., FROESCHNER 72 (BMNH); Coimbatore, Madras St., 1400', 1 female XI.1979, India, P.S. NATHAN (JAL).

DISTRIBUTION. - India, Sri Lanka.

***Lactistes (Eolactistes) truncatoserratus* SIGNORET, new combination**

(figs. 336-339)

*Lactistes truncatoserratus* SIGNORET, 1880: CLXXII; MOIZUDDIN & AHMAD, 1990: 329.

*Lactistes truncato-serratus* SIGNORET, 1881d: 51; ATKINSON, 1887: 44; LETHIERRY & SEVERIN, 1893: 61; DISTANT, 1901a: 101 [part], 1902: 87, objective synonym of *L. truncatoserratus* SIGNORET, 1880.

*Macroscytus longirostris* BERGROTH, 1915: 170; DISTANT, 1918, **new synonym**.

*Lactistes longirostris* HSIAO in HSIAO et al., 1977: 42, **new synonym**.

Misidentification: DISTANT, 1901a: 101 [part].

**DIAGNOSIS.** - The species differs from *L. (E.) mediator* in the presence of 1-2 setigerous punctures on the costa (3-7 setigerous punctures in *mediator*), in its almost straight penis (distinctly curved in *mediator*), and in the different shape of the paramere.

**DESCRIPTION.** - Body from dark castaneous to almost black, corium usually more brownish than pronotum and scutellum.

Head rugosely punctured; paraclypei almost joined in front of the clypeus, each with 3 submarginal setigerous punctures; eyes dark brown or blackish brown, ocular index 2.60-3.15; ocelli yellowish brown or reddish brown, interocellar index 5.0-7.0; antennae brown; rostrum brown or dark brown, reaching or surpassing posterior coxae.

Pronotum distinctly punctured, punctures larger than those on head; calli impunctate and slightly elevated, separated from each other by narrow punctured area; umbones slightly swollen; each lateral margin with a row of 6-9 submarginal setigerous punctures.

Scutellum densely punctured with exception of apex and anterolateral angles; punctures on the disc of the same size as or somewhat larger than those on pronotum.

Corium densely punctured, rows with punctures of the same size as those on scutellum, mesocorial disc with smaller punctures; costa with 1-2 setigerous punctures; membrane brown, distinctly surpassing the apex of abdomen.

Propleural depression, apical part of anterior convexity, and base of the posterior distinctly punctured; apex of peritreme as in fig. 337.

Sternites glossy in the middle, laterally punctured and slightly transversely wrinkled.

Legs blackish brown; anterior tibiae as in fig. 336.

Paramere as in fig. 338; penis as in fig. 339.

Measurements (male and female respectively): body length 6.15-8.25, 6.75-7.25; body width 3.41-4.51, 3.19-3.85; head length 1.17-1.22, 1.00-1.39; head width 1.44-1.71, 1.54-1.72; pronotum length 2.02-2.69, 2.07-2.32; pronotum width 3.19-4.09, 3.07-3.51; scutellum length 2.27-2.65, 2.44-2.58; scutellum width 2.05-2.31, 1.93-2.29; antennal segments: 0.28-0.32 : 0.25-0.28 : 0.35-0.39 : 0.39-0.49 : 0.44-0.49, 0.28-0.35 : 0.25-0.31 : 0.35-0.37 : 0.42-0.44 : 0.47-0.49.

**TYPE MATERIAL EXAMINED**

Lectotype female of *Lactistes truncatoserratus* SIGNORET (present designation): [INDIA]: Kaschmir, Coll. SIGNORET; *truncatoserratus* det. SIGNORET; Lectotype, *Lactistes truncatoserratus*, labelled by FROESCHNER 59; Coll. Nat.-Mus. Wien (NHMW).

**OTHER MATERIAL EXAMINED (17 males, 15 females)**

CHINA: Yunnan, 1 male (JAL); San-nen-Kai, Yunnan-Fou, Yunnan (China), 1 female, E. le MOULT, Museum Leiden (RNH).

INDIA: Inde, Bihar, Raxaul, 3 females 3 males 24-X-1965, leg. Y. DOMALAIN, Coll. R.I.Sc.N.B. (IRSNB, JAL); Inde, Surada, 1 male (ZIP); Kelara, Inde, 1 female, det. as *Cydinus indicus* by We-I YANG 1935

(MNHN); Indien, Bengal, Calcutta, 1 male 10.1927, J. KONIETYKO leg., Eing. Nr. 32 1932 (ZIZM); Calcutta, 4 females 1 male (BMNH, JAL); Dacca, 1 female 3.VI.1945, D. LESTON, B.M. 1945-86, det. as *Lactistes* species?, FROESCHNER 72 (BMNH); C. India, Yabalpur, 1600 ft. 1 male 2 females IX.1959, P. SUSAI NATHAN (RNH); S. India, Coimbatore, Madras State, 1400 ft, 1 male XI.1960, P. SUSAI NATHAN, Museum Leiden (RNH).

BURMA: Palon, Pegu, VIII-IX 87, L. FEA: 2 males Museo Civico di Genova, det. as *Lactistes truncatoserratus* SIGN. by DISTANT (MCSN), 1 male 1 female, DISTANT Coll. 1911-383 (BMNH); Palon, Pegu, Birmania, 1 female (JAL); Mungphu [=Mong Phu], 1 male, ATKINSON Coll. 92-3 (BMNH).

THAILAND: Pachim District, Siam, 2 males 1 female, 98-48, det. as *Lactistes truncato-serratus* SIGN. by W.E. CHINA (BMNH, ZIP).

VIETNAM: Indo-china, Tonkin, 1 male, R.V. de SALVAZA, 1917-98, Brit. Mus. 1922-112 (BMNH); Tonkin, 1 male June 1917, R.V. de SALVAZA, Brit. Mus. 1922-112 (BMNH).

DISTRIBUTION. - India, Burma, South China (Yunnan), Thailand, Vietnam.

REMARKS. - *L. truncatoserratus* was originally described by SIGNORET (1880) from "Indes nord"; nevertheless, the specimen designated as the lectotype bears the label "Kaschmir". There exist no other syntypes of this species in the collection of NHMW; probably SIGNORET (1880) omitted the exact locality and gave only North India as the collecting place.

I was not able to examine the type material of *L. longirostris* HSIAO (my requests for the loan of material from the Academia Sinica remained unanswered); nevertheless, the original description of the species fits well *L. truncatoserratus*. The number of setigerous punctures on the costa, and the clypeus not concealed by the paraclypei were the only two differences between *L. longirostris* and *L. truncatoserratus* noted by HSIAO (HSIAO et. al, 1977). *L. truncatoserratus* bears 1-2 setae on the costal margin, while HSIAO (op. cit.) gave none for *L. longirostris* ("hemelytra without bristles"). Nevertheless, when the setae on the costa are torn off, it is very difficult to find setigerous punctures and for somebody dealing with *Cydnidae* only occasionally the costa may look like "without bristles". The shape of paraclypei in *L. truncatoserratus* is also variable, and that given by HSIAO (op. cit.) fall into the range of variability of *L. truncatoserratus*. Additionally, I have examined one male and one female from Yunnan (the type locality of *L. longirostris*), which undoubtedly represented *L. truncatoserratus*. Basing on these facts I decided to treat *L. longirostris* as a junior synonym of *L. (E.) truncatoserratus*.

The type material of *Macroscytus longirostris* BERGROTH has not been traced, but the original description permits to synonymize this species with *L. truncatoserratus*.

Several specimens from Burma determined by DISTANT (1901a) as *L. truncatoserratus* pertained actually to *Aethoscytus foveolus* and *Pseudoscoparipes (Aethiellus) birmanus*; only the specimens from Pegu actually represented *L. truncatoserratus*.

### Subgenus *Lactistes* s.str.

DIAGNOSTIC CHARACTERS. - Anterior tibiae more or less prolonged forming a spatulate process, narrowed and curved apically, spines present on basal two thirds of outer margin; abdominal sternites impunctate, laterally more or less transversely wrinkled.

TYPE SPECIES. - *Lactistes vericulatus* SCHIÖDTE, 1847.



Key to species of *Lactistes* s.str.

1. Eyes small, slightly protruding (fig. 348); apical process of anterior tibiae longer and more slender (fig. 349) ..... 2.
- Eyes large, protruding (fig. 352); apical process of anterior tibiae shorter and stouter (figs. 345, 354) ..... 3.
2. Paramere as in fig. 342; 2nd conjunctival appendage of penis as in fig. 343; ocular index of female 2.95-3.25; East Palaearctic species ..... *falcolipes* (p. 204)
- Paramere as in fig. 350; 2nd conjunctival appendage of penis as in fig. 351; ocular index of female 3.30-3.70; Oriental species ..... *minutus* (p. 206)
3. Costa with 1 setigerous puncture; pronotum conspicuously narrowed apicad (fig. 341), each lateral margin with 3 submarginal setigerous punctures ..... *chinensis* (p. 203)
- Costa with 2-6 setigerous punctures; pronotum moderately narrowed apicad (fig. 353), each lateral margin with 10-13 submarginal setigerous punctures ..... 4.
4. Ocular index 2.45-3.00, interocellar index about 7.0-10.0; penis and paramere as in figs. 357 & 356, respectively ..... *rastellus* (p. 207)
- Ocular index 3.10-3.90, interocellar index about 4.6-6.5; penis and paramere as in figs. 346 & 346, respectively ..... *latus* (p. 205)

***Lactistes (Lactistes) chinensis*, new species**

(fig. 341)

**DIAGNOSIS.** - This new species can be at once recognized within the subgenus by the presence of the single setigerous puncture on the costa and only 3 submarginal setigerous punctures on each lateral margin of the pronotum (all the remaining species have at least two setigerous punctures on the costa and 7-13 on lateral margins of the pronotum).

**DESCRIPTION.** - Body dark castaneous. Head distinctly striated, sparsely punctured; clypeus almost impunctate, evidently shorter than paraclypei, which are almost joined in a front of the former; each paraclypeus submarginally with 3 setigerous punctures; eyes blackish brown, ocular index 2.33; ocelli reddish brown, interocellar index 8.5; antennae yellowish brown; rostrum yellowish brown, reaching anterior margin of hind coxae.

Pronotum distinctly narrowed apicad (fig. 341); disc moderately punctured, posterior fourth and calli impunctate; the latter slightly elevated and separated from each other by partial irregular row of punctures; all punctures larger than those of head; umbones distinctly swollen, covering posterolateral margins; each lateral margins with 3 submarginal setigerous punctures.

Scutellum sparsely punctured, punctures of the same size as those on pronotum; anterolateral angles and apex impunctate, the latter tongue-like; lateral parts of a disc slightly wrinkled.

Corium densely punctured, punctures large; clavus with one complete and two partial rows of punctures; mesocorium with two rows of punctures paralleling clavo-corial suture, mesocorial disc densely and almost evenly punctured; exocorium laterally impunctate; costa with 1 setigerous puncture; membrane semihyaline, browned, decidedly surpassing the tip of abdomen.

Propleuron smooth and polished, apical part of anterior convexity slightly alutaceous, depression with a few coarse punctures; evaporatoria typical of the genus.

Sternites impunctate, lateral parts distinctly transversely striated.

Apical process of anterior tibiae short and stout, only slightly curved.

Measurements (female only): body length 7.75; body width 4.05; head length 1.22; head width 1.80; pronotum length 2.19; pronotum width 3.69; scutellum length 2.83; scutellum width 2.46; antennal segments: 0.29 : 0.29 : 0.38 : 0.46 : 0.48.

TYPE MATERIAL EXAMINED

Holotype female: Canton, China (JAL).

DISTRIBUTION. - South China (Guangdong).

***Lactistes (Lactistes) falcolipes* HSIAO**

(figs. 342-343)

*Lactistes falcolipes* HSIAO in HSIAO et al., 1977: 42 & 295; TOMOKUNI, 1992: 358.

DIAGNOSIS. - This East Palaearctic species can be easily separated from all (except *minutus*) Oriental members of the subgenus by the slightly protruding eyes combined with longer and more slender apical process of the anterior tibiae. Females of *L. (L.) falcolipes* differ from females of *L. (L.) minutus* in the ocular index (3.30-3.60 in *minutus*, 2.95-3.25 in *falcolipes*), males in the different shape of the paramere and the 2nd conjunctival appendages of penis.

DESCRIPTION. - Body from castaneous to dark castaneous, 5.6-7.5 mm in length.

Head distinctly striated and punctured with numerous small punctures; paraclypei joined in a front of clypeus, submarginally with 3 setigerous punctures on either side; eyes blackish brown, slightly protruding, ocular index 2.95-3.25; ocelli reddish brown, interocellar index 5.0-6.0; 2nd antennal segment slightly shorter than the 3rd; rostrum reaching middle coxae.

Pronotal disc with punctures larger than those on head; each lateral margin with a row of 9-10 submarginal setigerous punctures; umbones slightly swollen and somewhat concealing posterolateral angles.

Scutellum densely punctured, punctures larger than those on pronotum; anterolateral angles and apex impunctate.

Corium punctured, punctures almost of the same size as those on scutellum; clavus with one complete and two partial rows of punctures; mesocorium with two rows of punctures paralleling clavo-corial suture, mesocorial disc moderately punctured; exocorium sparsely punctured; costa with 2-4 setigerous punctures; membrane slightly browned, surpassing the tip of abdomen.

Propleuron with numerous punctures in depression, and several at base of posterior convexity; evaporatoria typical of the genus.

Sternites impunctate, laterally slightly transversely wrinkled.

Apical process of anterior tibiae long, slender and distinctly curved.

Paramere as in fig. 342, apical part of penis as in fig. 343.

TYPE MATERIAL EXAMINED

Holotype female of *Lactistes falcolipes* HSIAO: [CHINA]: China (Hubei Prov.: Wu-chang), 11.viii.1975, S.H. Yin; Holotype; *Lactistes falcolipes* HSIAO 1974 (DBNU).

OTHER MATERIAL EXAMINED (1 male, 2 females)

CHINA: Jentschoufu [=Yanzhou], Schant., 2 females 1 male 22 V, KREYENBERG 1911-12, Deutsch. Entom. Mus. Berlin Dahlem, det. as *Lactistes rastellus* SIGN. by KRITSHENKO (ZIP, JAL).

DISTRIBUTION. - East Palaearctic species known only from China (Hubei, Shandong), and Japan.

***Lactistes (Lactistes) latus* DISTANT**  
(figs. 340, 344-347)

*Lactistes latus* DISTANT, 1918: 116; MOIZUDDIN & AHMAD, 1990: 329.

DIAGNOSIS. - This species is best diagnosed by the set of following characters: the apical process of the anterior tibiae short and stout; the eyes distinctly protruding, with the ocular index from 3.10 to 3.90, and the interocellar index about 4.5-6.5; the costa bearing 2-4 setigerous punctures; each lateral margin of the pronotum with a row of 10-13 submarginal setigerous punctures. The species differs from other members of the subgenus also in the shape of male genitalia.

DESCRIPTION. - Body (fig. 340) from pale brown to blackish brown.

Head distinctly striated and finely punctures; paraclypei joined in a front of clypeus, each bearing 3 submarginal setigerous punctures; eyes reddish brown or blackish brown, ocular index 3.10-3.90; ocelli reddish brown or brown, interocellar index about 4.5-6.5; antennae brown or dark brown; rostrum brown, reaching middle coxae.

Pronotum punctured with large punctures; calli, umbones and posterior margin impunctate; calli somewhat elevated and separated from each other by a group of several punctures; umbones swollen; each lateral margin with a row of 10-13 submarginal setigerous punctures.

Scutellum almost evenly punctured with exception of apex and anterolateral angles; disc sometimes transversely wrinkled in lateral parts.

Corium densely punctured, punctures smaller than those on scutellum and pronotum; clavus with one complete and two partial rows of punctures; mesocorium with two rows of punctures paralleling clavo-corial suture, mesocorial disc densely punctured; costa with 2-4 setigerous punctures; membrane semihyaline, browned, distinctly surpassing the tip of abdomen.

Propleuron with punctures in depression; evaporatoria as in fig. 344; apex of peritreme with long, slightly curved claw-like tooth.

Sternites smooth, laterally slightly wrinkled.

Anterior tibiae as in fig. 345.

Paramere as in fig. 346, penis as in fig. 347.

Measurements (male and female respectively): body length 6.75-7.35, 5.75-7.90; body width 3.95-4.50, 3.50-4.34; head length 1.09-1.19, 1.02-1.05; head width 1.49-1.57, 1.37-1.73; pronotum length 2.05-2.24, 1.78-2.27; pronotum width 3.37-3.71, 3.07-3.93; scutellum length 2.32-2.34, 1.98-2.71; scutellum width 2.37-2.39, 2.10-2.66; antennal segments: 0.31-0.34 : 0.31-0.32 : 0.34-0.36 : 0.36-0.37 : 0.38-0.39, 0.25-0.35 : 0.26-0.31 : 0.28-0.38 : 0.32-0.46 : 0.32-0.42.

TYPE MATERIAL EXAMINED

Lectotype male of *Lactistes latus* DISTANT (present designation): [INDIA]: Type; Chikkaballapura, S. India, T.V. CAMPBELL; P7; S. India, E.A. BUTLER 1915-60; *Lactistes latus* DIST., type; Brit. Mus. Type No. Hem. 272; Lectotype det. J.A. LIS 1990 (BMNH).

Paralectotypes: 2 females: [INDIA]: Paratype; *Lactistes latus* DIST.; Chikkaballapura, S. India, T.V. CAMPBELL; P7; S. India, E.A. BUTLER 1915-60; Paralectotype det. J.A. LIS 1990 (BMNH); 1 male: [INDIA]: Paratype; Chikkaballapura, S. India, T.V. CAMPBELL; P6; S. India, E.A. BUTLER 1915-60; *Lactistes latus* DIST.; Paralectotype det. J.A. LIS 1990 (BMNH); 1 female: [INDIA]: Mysore State, S. India, T.V.C.; Paratype; P6; Ex Coll. E.A. BUTLER, B.M. 1926-171; *Lactistes latus* DIST. (BMNH).

## OTHER MATERIAL EXAMINED (5 males, 12 females)

INDIA: S. India, 1 female, ATKINSON Collection, Bought 1895 (HEC); Maissour Gathes (Mt Tabourel), 1 female, R. OBERTHUR 1898, Muséum Paris (MNHN); South India, Madras State, Coimbatore, 1400ft, 1 male XI-1966, P.S. NATHAN (ZMA); Coimbatore, 1 female 28.III.12, A.G.R. coll. (BMNH); Chikkaballapura, S. India, T.V. CAMPBELL: 1 male, det. as *Lactistes latus* DIST. ex. coll. E. BUTLER, Syntypus? (ZIP), 2 females, det. as *Lactistes latus*, South India, T.V.C. CAMPBELL Coll., B.M. 1950-599, det. as *Lactistes vicinus* (BMNH); South India, 2 males 2 females, T.V.CAMPBELL Coll., B.M. 1930-599 (BMNH, JAL); Bombay, Leth., 1 male, DISTANT Coll. 1911-383, det. as *Lactistes vicinus* SIGN. (BMNH); Dohnavur, 350', Tinnevely Dt., S. India, 1 female 29-X-38, 1 female 3-X-38, B.M.-C.M. Expedn. to S. India, Sept.-Oct. 1938, det. as *Lactistes* species?, FROESCHNER 72 (BMNH, JAL); Pondichery, 1 female, Muséum Paris, coll. AMYOT et SERVILLE (MNHN); Coromandel, Genji, 1 female 25 aout-15sept. 1901, M. MAINDRON 1902, Muséum Paris, *Lactistes* sp., We-I YANG det. 1935 (MNHN).

BURMA: Burma, Rangoon, 1 female (JAL).

DISTRIBUTION. - India, Burma.

***Lactistes (Lactistes) minutus*, new species**

(figs. 348-351)

*Lactistes rastellus*, not of SCHIÖDTE: STÅL, 1870: 614, 1876: 17 [part]; WALKER, 1873: 13; SIGNORET, 1881d: 49; ATKINSON, 1887: 43 [part]; LETHIERRY & SEVERIN, 1893: 61 [part]; DISTANT, 1902: 86 [part], 1918: 116; BOX, 1953: 36; HASEGAWA, 1962: 7; MOIZUDDIN & AHMAD, 1990: 330 [part].

DIAGNOSIS. - This new species can be easily separated from other Oriental members of the subgenus by the slightly protruding eyes, and the apical process of the anterior tibiae longer and more slender than in the remaining species. In these characters the species is allied to East Palaearctic *L. (L.) falcolipes*, but differs from the latter in the shape of the paramere and the female ocular index (2.95-3.25 in *falcolipes*, 3.30-3.60 in *minutus*).

DESCRIPTION. - Body from castaneous to almost blackish brown.

Head distinctly striated, and coarsely punctured, except for clypeus; paraclypei longer than clypeus, joined or almost joined in a front of the latter; eyes reddish brown or dark brown, only slightly protruding (fig. 348), ocular index 3.15-3.70 (3.15-3.45 in male, 3.30-3.70 in female); ocelli reddish brown, interocellar index 5.0-7.0; antennae yellowish brown or brown; rostrum yellowish brown or brown, reaching middle coxae.

Pronotum subquadrate, slightly narrowed apicad; disc with distinct large punctures; calli large, elevated and impunctate, as well as umbones and posterior margin; umbones more or less swollen; lateral margins postmedially slightly sinuated, each with a row of 7-10 submarginal setigerous punctures.

Scutellum densely punctured, punctures either slightly smaller than or of the same size as those on pronotum; anterolateral angles and apex impunctate.

Corium distinctly punctured, punctures of the same size as those on pronotum; clavus with one complete and two partial rows of punctures; mesocorium with two rows of punctures paralleling clavo-corial suture, mesocorial disc densely punctured; exocorium sparsely punctured; costa with 2-4 setigerous punctures; membrane more or less browned, distinctly surpassing the tip of abdomen.

Propleuron with several coarse punctures in depression; evaporatoria typical of the genus.

Sternites polished, impunctate, laterally more or less transversely wrinkled.

Apical process of anterior tibiae longer and more slender than in remaining Oriental species of the subgenus (fig. 349).

Paramere as in fig. 350; apical part of penis as in fig. 351.

Measurements (male and female respectively): body length 5.90-6.55,

5.07-5.70; body width 3.09-3.17, 2.54-3.01; head length 1.05-1.08, 0.97-1.00; head width 1.40-1.49, 1.24-1.33; pronotum length 1.71-1.90, 1.44-1.71; pronotum width 2.90-2.95, 2.46-2.78; scutellum length 1.97-2.07, 1.75-1.95; scutellum width 1.85-1.95, 1.54-1.80; antennal segments: 0.21-0.25 : 0.19-0.28 : 0.29-0.34 : 0.32-0.35 : 0.39-0.40, 0.21-0.22 : 0.17-0.21 : 0.28-0.29 : 0.28-0.35 : 0.36-0.39.

TYPE MATERIAL EXAMINED

Holotype male: [VIETNAM]: Vietnam, Ha Son-Binh, Hoa-Binh, 15-21.X.76, L. MEDVEDEV leg., J.A. Lis coll. (JAL).

Paratypes: 3 females: [VIETNAM]: Tonkin, Rég. de Hoa Binh, A. de COOMAN 1927, Muséum Paris, *L. falcolipes* Hsiao, det. J.A. Lis (MNHN); 1 female: [VIETNAM]: Tonkin N., Ha-Giang, Lieut. col. BONIFACY 1914, Muséum Paris, *L. falcolipes* Hsiao, det. J.A. Lis (MNHN); 1 female: [VIETNAM]: Cochinchine, *L. falcolipes* Hsiao, det. J.A. Lis (HNHM); 1 female: [VIETNAM]: Hué, Muséum Paris, coll. NOUALHIER 1898, *L. falcolipes* Hsiao, det. J.A. Lis (MNHN); 1 female: [VIETNAM]: Tam Dao, Prov. Vinh Yen, 900m, 21°26'N, 105°38'E, 12.X.1986, at light, No. 35, MÉSZÁROS-OLAH-VASARHELYI, *L. falcolipes* Hsiao, det. J.A. Lis (HNHM); 1 female: [VIETNAM]: Tam Dao, 200m, 1 female 12.X.1986, at light, No.35, leg. VASARHELYI, *L. falcolipes* Hsiao, det. J.A. Lis (JAL); 1 male: [VIETNAM]: Saigon (JAL); 1 male: [CAMBODIA]: Indo-China, Kompong Keday, R. de SALVAZA, 1917-98 (JAL); 1 female: [PHILIPPINES]: Philippinen, C. SEMPER leg., 64 (ZIZM).

DISTRIBUTION. - Vietnam, Cambodia, Philippines.

REMARKS. - The species is the smallest one among the Oriental representatives of the subgenus (body length 5.07-6.55 in *minutus*, 5.75-7.90 in other species).

Almost all specimens included in the type material have been previously determined by me as *L. falcolipes*; only recently it has turned out that specimens from Vietnam, Cambodia, and Philippines represented a new species.

***Lactistes (Lactistes) rastellus* SCHIØDTE**

(figs. 352-357)

*Lactistes rastellus* SCHIØDTE, 1847: 457; ATKINSON, 1887: 43 [part]; LETHIERRY & SEVERIN, 1893: 61 [part]; DISTANT, 1899a: 219 [part], 1901a: 101 [part], 1902: 86 [part], 1918: 116; MAXWELL-LEFROY, 1909: 305; AHMAD et al., 1979: 15 & 19.

*Lactistes vicinus* SIGNORET, 1880: CLXXII; ATKINSON, 1887: 43; LETHIERRY & SEVERIN, 1893: 61; DISTANT, 1902: 87; MOIZUDDIN & AHMAD, 1990: 331, **new synonym**.

*Lactistes vicinus* SIGNORET, 1881d: 50, objective synonym of *Lactistes vicinus* SIGNORET, 1880.

*Lctistes* [sic] *vicinus*: AHMAD et al., 1979: 19.

Misidentifications: STAL, 1870: 614, 1876: 17 [part]; WALKER, 1873: 13; SIGNORET, 1881d: 49; ATKINSON, 1887: 43 [part]; LETHIERRY & SEVERIN, 1893: 61 [part]; DISTANT, 1899a: 219 [part], 1901a: 101 [part], 1902: 86 [part]; BOX, 1953: 36; HASEGAWA, 1962: 7; MOIZUDDIN & AHMAD, 1990: 331 [part].

DIAGNOSIS. - This species can be easily separated from other members of the subgenus by the characters given in the key. It is closely related to *L. (L.) latus*, but differs from the latter in the ocular index (2.45-3.00 in *rastellus*, 3.10-3.90 in *latus*), the interocellar index (7.0-10.0 in *rastellus*, 4.5-6.5 in *latus*), and the shape of male genitalia.

DESCRIPTION. - Body from dark castaneous to blackish brown, corium sometimes paler than pronotum and scutellum.

Head striated and punctured, medially smooth or with tiny punctures; paraclypei joined in front of clypeus; each paraclypeus with 3 submarginal setigerous punctures (fig. 352); eyes brown or blackish brown, ocular index 2.45-3.00; ocelli reddish brown or orange, interocellar index 7.0-10.0; antennae light brown, brown or dark brown; rostrum brown or dark brown, reaching middle coxae.

Pronotum punctured as in fig. 353; umbones slightly covering posterolateral margins; each lateral margin with a row of 10-16 submarginal setigerous

punctures.

Scutellum almost evenly punctured, punctures of the same size as or slightly smaller than those on pronotum, apex and basal part impunctate.

Corium with a pattern of punctuation as in *L. (L.) latius*, punctures of the same size as or slightly smaller than those on scutellum; costa with 2-4 setigerous punctures; membrane hyaline, slightly browned, distinctly surpassing the tip of abdomen.

Propleuron with a few scattered punctures in depression; apex of peritreme as in fig. 355. Sternites polished, laterally slightly transversely wrinkled.

Anterior tibiae with the apical process short, stout and only slightly curved (fig. 354).

Paramere and penis as in figs. 356 & 357, respectively.

Measurements (male and female respectively): body length 6.50-7.75, 6.25-7.40; body width 3.58-4.22, 3.34-4.19; head length 0.95-1.22, 0.85-1.23; head width 1.58-1.68, 1.49-1.70; pronotum length 1.83-2.19, 1.91-2.31; pronotum width 3.41-3.73, 3.17-3.76; scutellum length 2.19-2.51, 2.29-2.58; scutellum width 2.12-2.34, 2.07-2.48; antennal segments: 0.24-0.28 : 0.21-0.28 : 0.29-0.34 : 0.31-0.39 : 0.33-0.56, 0.23-0.31 : 0.26-0.29 : 0.26-0.35 : 0.35-0.42 : 0.39-0.40.

#### TYPE MATERIAL EXAMINED

Lectotype male of *Lactistes rastellus* SCHIÖDTE (present designation): [INDIA]: Sirampur, ELBERLING, *Rastellus* SCHIO. (origin); Type (ZMC).

Lectotype female of *Lactistes vicinus* SIGNORET (present designation): [INDIA]: N. Indien, Coll. SIGNORET; *vicinus* det. SIGNORET; Lectotype, *Lactistes vicinus* SIGN., labelled by R.C. FROESCHNER 59; Coll. Nat.-Mus. Wien (NhMW).

#### OTHER MATERIAL EXAMINED (2 males, 13 females)

PAKISTAN: Pakistan, Madyan - Swat, 1 female VI-VII 1972, Lichtfang, lg. HOLZSCHUH, Collection E. HEISS Innsbruck (EHC).

INDIA: South India, Coimbatore District, Marudamalai Hills, 1800ft, 1 female X-1969, P.S. NATHAN (ZMA); Simla, 1 female, HARMAND 1887 (JAL); Inde, Berlary, 1 female, CHAPER 1883, Muséum Paris (MNHN); Sarda, Bengal, 1 male, F.W.C. (JAL); Calcutta, 1 female (BMNH); Inde, 1 female, Muséum Paris, coll. NOULAHIER 1898 (MNHN), 1 female, ATKINSON Coll. 92-3 (BMNH); Ind., 1 female, SAUNDERS 63.13, det. as *Aethus indicus* WALKER'S catal. (BMNH); India, Calcutta, West Bengal, 1 female (JAL); N. Delhi, India, 1 male 22.VII.958, ALEKSANDROV (ZIP); Nirth, 60 miles fr. Simla, 1000 m, 1 female 31.7.26, v.d. SLEEN leg., W.-Himalaya, Hindustan-Thibet-Road, det. as *Stibaropus henkei* JAK., Zool. Mus. Amsterdam (ZMA).

SRI LANKA: Jaffna, Ceylon, 1 female IX-1911, T.B. FLETCHER 1909-80, det. as *Lactistes*?, Brit. Mus. (BMNH).

BURMA: Mandalay, Birmania, 1 female, FEA VI 1885, DISTANT Coll. 1911-383, det. as *Lactistes rastellus* SCHIÖDTE (BMNH); Kyum-Chang, Burma, 1 female 30.VIII.1976, N. YOSHIDA leg. (NSMT).

DISTRIBUTION. - Pakistan, India, Sri Lanka, Burma.

The records from Philippines (Box, 1953) and Cambodia (HASEGAWA, 1962) pertain to *L. (L.) minutus*.

REMARKS. - The lectotype male of *L. rastellus* and the lectotype female of *L. vicinus* are conspecific, and therefore the two species are synonymized herein. *L. vicinus* was originally described by SIGNORET (1880) from Bombay; then in a revision of *Cydnidae* (SIGNORET, 1881d) he described this species once more from "India sept."; only the type specimen with the label "N. Indien" (selected by R.C. FROESCHNER as the lectotype) was examined. The type specimen with the label "Bombay" has not been found; it is quite possible that both descriptions (of 1880, and of 1881d) were based on the same only specimen.

A part of the specimens from Burma determined by DISTANT (1901a) as *L. rastellus* pertained actually to *Aethoscytus foveolus* and *Aethus indicus*.



## Genus *Macroscytus* FIEBER

*Macroscytus* FIEBER, 1860: 83.

*Hahnia* ELLENRIEDER, 1862: 139, name preoccupied by *Hahnia* KOCH, 1841 [in *Aranea*], **new synonym**.

*Philapodemus* KIRKALDY, 1910b: 8 [as a new name for *Hahnia* ELLENRIEDER, 1862], **new synonym**.

**DIAGNOSIS.** - The genus can be easily recognized within the tribe by the conspicuously swollen umbones of the pronotum, the shape of the peritremal apex, and the head bearing only hair-like setae.

**DESCRIPTION.** - Body from medium sized to large, ovate, usually dark coloured.

Head broadly rounded, dorsal surface usually impunctate; clypeus free, without (in *aequalis*- and *javanus*-group) or with (in *lansbergi*-group) a pair of subapical hair-like setae; each paraclypeus submarginally with one or two (in *aequalis*-group) or at last three (in *javanus*- and *lansbergi*-group) hair-like setae; eyes large, protruding; ocelli distinctly developed; antennae 5-segmented.

Pronotum broader than long, narrowed apically; anterior margin angularly insinuated; disc punctured anteriorly, laterally, and behind the middle, calli distinct, a postmedian transverse impression from absent to distinctly developed; each lateral margin with submarginal setigerous punctures; umbones strongly swollen, protruding caudolateral, concealing posterolateral margins.

Scutellum longer than broad; basal and lateral rows of punctures distinctly developed; disc more or less punctured, usually with exception of apex and anterolateral angles.

Corium divided into clavus, meso- and exocorium; clavus with rows of punctures; mesocorium with two rows of punctures paralleling clavo-corial suture; costa either without or with setigerous punctures; membranal suture almost straight, membrane normally developed, not reduced.

Propleuron with deep, usually punctured depression; meso- and metapleuron with large evaporatoria, that of mesopleuron posteriorly with polished band; peritreme distinctly differentiated, its apex posteriorly with more or less blunt lobe (figs. 362, 377, 407, 411).

Sternites from impunctate to distinctly punctured and wrinkled, usually at least a patch of tiny punctures is present close to spiracles.

Anterior tibiae expanded apically, margins armed in spines, male posterior femora usually with one subapical tooth on dorsal margin, and several more or less distinct teeth or spines on ventral margin; female posterior femora without or with small subapical tooth on dorsal margin, and several setae on ventral margin; posterior tibiae slender, basally more or less reflected and usually with more or less distinct tubercles in male specimens.

Genitalia of the common geotomine type.

**TYPE OF GENUS.** - *Cydnus brunneus* FABRICIUS, 1803, subsequent monotypy by FIEBER, 1861; of *Hahnia*, *Hahnia gibbula* ELLENRIEDER, 1862, by monotypy; of *Philapodemus*, *Hahnia gibbula* ELLENRIEDER, 1862, by automatic fixation.

**REMARKS.** - Species in this genus can be divided into three groups on the basis of the type of head vestiture (as shown in the key): *aequalis*-group, *javanus*-group, and *lansbergi*-group. At this moment I think it premature to decide whether these groups require the status of subgenera. The species in the groups are very closely related morphologically and sometimes the only way for exact determination is comparing of the male genitalia; the most difficult is the correct determination of

females, especially in the *aequalis*-group; nevertheless I have tried to find a set of characters for each species, which would make possible proper identification of both sexes.

#### Key to species-groups of *Macroscytus*

1. Submargins of head with either one or two submarginal setigerous punctures on each paraclypeus (figs. 360, 366, 379, 388, 396) . . . . . ***aequalis*-group** (p. 210)
- Submargins of head with at least three submarginal setigerous punctures on each paraclypeus (figs. 402, 410) . . . . . 2.
2. Clypeus without subapical setigerous punctures (fig. 402) . . . . . ***javanus*-group** (p. 235)
- Clypeus with a pair of submarginal setigerous punctures (fig. 410) . . . . .  
. . . . . ***lansbergi*-group** (p. 243)

#### ***aequalis*-group**

Each paraclypeus with one or two submarginal setigerous punctures; clypeus without a pair of submarginal setigerous punctures.

#### Key to species of *aequalis*-group

1. Each paraclypeus with 2 submarginal setigerous punctures (fig. 396) . . . . . ***vietnamicus*** (p. 234)
- Each paraclypeus with the single preocular submarginal setigerous puncture . . . . . 2.
2. Costa without setigerous punctures . . . . . ***celebensis*** (p. 217)
- Costa with at least 1 setigerous puncture . . . . . 3.
3. Costa with 1 setigerous puncture . . . . . 4.
- Costa with at least 2 setigerous punctures . . . . . 6.
4. Head distinctly punctured on paraclypei; pronotum bicoloured, umbones intensely ochraceous or yellowish brown; pronotal disc with large coarse punctures; sternites coarsely punctured anterior, posterior and mesad of spiracles . . . . . ***bipunctatus*** (p. 214)
- Head impunctate; pronotum uniformly dark coloured; pronotal disc with small punctures; sternites finely punctured only anterior and posterior to spiracles . . . . . 5.
5. 2nd conjunctival appendages as in fig. 361; scutellum densely punctured (fig. 360); 3rd antennal segment 1.40-1.65 times longer than the 2nd; each lateral margin of pronotum with 3-4 submarginal setigerous punctures; smaller species, 8.95-12.05 mm in length . . . . . ***borneensis*** [part] (p. 215)
- 2nd conjunctival appendages as in fig. 378; scutellum sparsely punctured (fig. 376); 3rd antennal segment 1.60-1.90 times longer than the 2nd; each lateral margin of pronotum with 4-6 submarginal setigerous punctures; larger species, 10.67-12.17 mm in length . . . . . ***pfeifferi*** [part] (p. 224)
6. Pronotum dark coloured, with umbones and posterior margin intensely ochraceous or yellowish brown; 2nd conjunctival appendage as in fig. 392 . . . . . ***transversus*** (p. 231)
- Pronotum uniformly coloured, sometimes only umbones apically slightly paler than the disc; 2nd conjunctival appendage not as above . . . . . 7.
7. Costa with 3-4 setigerous punctures, if costa with 2 setigerous punctures then body length not exceeding 8.0 mm . . . . . 8.
- Costa with 2 setigerous punctures, body length exceeding 8.0 mm . . . . . 10.

8. Pronotal disc with very deep, coarsely punctured, postmedian transverse impression prolonged laterally backwards to posterolateral angles (fig. 375); 2nd conjunctival appendage as in fig. 374 ..... *noonadanae* [part] (p. 223)
- Pronotal disc without or with shallow postmedian transverse impression; 2nd conjunctival appendages not as above ..... 9.
9. 2nd conjunctival appendages as in fig. 394; interocellar index 5.5-8.3; ocellar index 5.0-6.5; Indonesian species ..... *utaranus* (p. 233)
- 2nd conjunctival appendages as in fig. 381; interocellar index 8.0-12.0; ocellar index 4.3-5.5; continental species ..... *popovi* [part] (p. 225)
10. Pronotal disc without postmedian transverse impression (fig. 382) ..... 11.
- Pronotal disc with more or less conspicuous postmedian transverse impression .... 13.
11. Sternites distinctly punctured in lateral two thirds; 2nd conjunctival appendages as in fig. 359 ..... *aequalis* [part] (p. 212)
- Sternites punctured only close to spiracles; 2nd conjunctival appendages not as above ..... 12.
12. 2nd conjunctival appendages as in fig. 385; scutellum either almost impunctate or with a few punctures only; Oriental species ..... *subaeneus* (p. 227)
- 2nd conjunctival appendages as in fig. 372; scutellum densely punctured; East Palaearctic species ..... *japonensis* [part] (p. 221)
13. Sternites distinctly punctured, or punctured and wrinkled in lateral two thirds ..... 14.
- Sternites punctured only close to spiracles, sometimes also slightly wrinkled ..... 16.
14. Lateral two thirds of sternites densely wrinkled and finely punctured; pronotal postmedian transverse impression very deep and laterally coarsely punctured (fig. 388); each lateral margin of pronotum with 4 submarginal setigerous punctures; 2nd conjunctival appendage as in fig. 390 ..... *tenasserimus* (p. 230)
- Lateral two thirds of sternites distinctly punctured and only sometimes weakly wrinkled; pronotal postmedian transverse impression shallow or moderately deep; each lateral margin of pronotum with 5-6 submarginal setigerous punctures; 2nd conjunctival appendages not as above ..... 15.
15. 3rd antennal segment 1.00-1.29 times longer than the 2nd; eyes and ocelli smaller, ocular index 2.20-3.10, interocellar index 4.8-7.0, ocellar index 4.5-6.1; 2nd conjunctival appendage as in fig. 359 ..... *aequalis* [part] (p. 212)
- 3rd antennal segment 1.30-1.54 times longer than the 2nd; eyes and ocelli larger, ocular index 1.82-2.40, interocellar index 7.4-11.0, ocellar index 3.5-5.0; 2nd conjunctival appendage as in fig. 370 ..... *dominiqueae* (p. 219)
16. Postmedian transverse impression on pronotum very deep, coarsely punctured, and laterally continued backwards to posterolateral angles (fig. 375); paramere and penis as in figs. 373 & 374 ..... *noonadanae* [part] (p. 223)
- Postmedian transverse impression on pronotum moderately deep, laterally not continued backwards to posterolateral angles; paramere and penis not as above ..... 17.
17. 2nd conjunctival appendage as in fig. 381; punctures around spiracles almost indistinct, sometimes absent; lateral margins of pronotum with 5-8 submarginal setigerous punctures ..... *popovi* [part] (p. 225)
- 2nd conjunctival appendages not as above; punctures around spiracles clearly visible; lateral margins of pronotum with 3-6 submarginal setigerous punctures ..... 18.
18. Ocelli smaller, ocellar index 5.1-8.5; 2nd conjunctival appendages as in fig. 372; East Palaearctic species ..... *japonensis* [part] (p. 221)

- Ocelli larger, ocellar index 2.9-4.9; 2nd conjunctival appendages not as above; Oriental species ..... 19.
- 19. Sternites with patches of tiny punctures anterior and posterior to spiracles; 2nd conjunctival appendages as either in fig. 361 or in fig. 378 ..... 20.
- Sternites with patches of tiny punctures only posterior to spiracles; 2nd conjunctival appendages not as above ..... 21.
- 20. 2nd conjunctival appendage as in fig. 361; scutellum densely punctured (fig. 360); 3rd antennal segment 1.40-1.65 times longer than the 2nd; each lateral margin of pronotum with 3-4 submarginal setigerous punctures; smaller species, 8.95-12.05 mm in length . . . . . *borneensis* [part] (p. 215)
- 2nd conjunctival appendage as in fig. 378; scutellum sparsely punctured (fig. 376); 3rd antennal segment 1.60-1.90 times longer than the 2nd; each lateral margin of pronotum with 4-6 submarginal setigerous punctures; larger species, 10.67-12.17 mm in length . . . . . *pfeifferi* [part] (p. 224)
- 21. Lateral margins of pronotum with 6 submarginal setigerous punctures ..... *dalawanus* [part] (p. 218)
- Lateral margins of pronotum with 4-5 submarginal setigerous punctures ..... 22.
- 22. 2nd conjunctival appendage as in fig. 387; smaller species, 8.43-10.78 mm in length . . . . . *sumatranus* (p. 228)
- 2nd conjunctival appendages as in fig. 365; larger species, 9.36-11.57 mm in length . . . . . *dalawanus* [part] (p. 218)

*Macroscytus gibbulus* is excluded from the key.

### ***Macroscytus aequalis* (WALKER), distinct species**

(fig. 359)

*Aethus aequalis* WALKER, 1867: 159 [lectotype from Hong Kong]; LETHIERRY & SEVERIN, 1893: 81 [part].  
*Macroscytus foveolus*, not of DALLAS: ATKINSON, 1887: 53 [part]; LETHIERRY & SEVERIN, 1893: 81 [part]; DISTANT, 1902: 97 [part]; BREDDIN, 1909: 263; JOSIFOV & KERZHNER, 1978: 188, 189.  
*Macroscytus foveola*, not of DALLAS: BERGROTH, 1915: 170; HORVÁTH, 1919: 240.  
*Macroscytus favoela* [sic!], not of DALLAS: HASEGAWA, 1962: 7.

**DIAGNOSIS.** - The species is best diagnosed by the set of following characters: each paratype with the single preocular submarginal setigerous puncture; the costa with 2 setigerous punctures; the pronotum uniformly coloured, with 5-6 submarginal setigerous punctures on each lateral margin; the sternites distinctly punctured in lateral two thirds; the ocular index from 2.20 to 3.10, the interocellar index from 4.8 to 7.0, the ocellar index from 4.5 to 6.1; the 3rd antennal segment 1.00-1.29 times longer than the 2nd; the 2nd conjunctival appendages as in fig. 359.

**DESCRIPTION.** - Body from ochraceous to almost black.

Head dorsally either impunctate or with several punctures laterally; clypeus as long as paratype, parallel-sided; each paratype with the single preocular submarginal setigerous punctures; eyes from reddish brown to almost black, ocular index 2.20-3.10 (2.30-3.10 in male, 2.20-2.85 in female); ocelli usually reddish brown, interocellar index 4.8-7.0, ocellar index 4.5-6.1; antennae paler than head, 3rd segment 1.00-1.29 times longer than the 2nd; rostrum pale brown or brown,

reaching middle coxae.

Pronotal postmedian transverse impression either almost indistinct or conspicuously developed; anterior margin, lateral parts and posterior lobe more or less distinctly punctured, calli large; each lateral margin with 5-6 submarginal setigerous punctures.

Scutellum punctured, except anterolateral angles and apex; the latter elongated; punctures of the same size as those on pronotum.

Corium punctured; clavus with one complete and two partial rows of punctures; mesocorium with two rows of punctures paralleling clavo-corial suture, mesocorial disc almost evenly punctured, punctures almost of the same size as those on pronotum; exocorium with very dense puncturation, punctures smaller than those on mesocorium; costa with 2 setigerous punctures; membrane semihyaline, browned, broader than abdomen and surpassing its tip.

Propleural depression and basal half of posterior convexity distinctly punctured; evaporatoria and apex of peritreme typical of the genus.

Sternites distinctly punctured in lateral two thirds, sometimes puncturation of the last two segments less distinct.

Male posterior femora with large subapical tooth on dorsal margin, and several smaller teeth on ventral margin, posterior tibiae with small subbasal tubercle; female posterior femora with several strong setae on ventral margin, posterior tibiae without tubercle.

Apical part of penis as in fig. 359.

Measurements (male and female respectively): body length 8.43-11.27, 9.51-10.78; body width 4.56-5.88, 5.05-5.42; head length 1.12-1.38, 1.32-1.57; head width 1.91-2.35, 2.16-2.35; pronotum length 2.25-2.94, 2.55-2.84; pronotum width 4.21-5.39, 4.51-5.05; scutellum length 3.28-4.41, 3.77-4.26; scutellum width 2.79-3.58, 2.94-3.24; antennal segments: 0.40-0.45 : 0.55-0.67 : 0.63-0.76 : 0.83-0.98 : 0.94-1.04, 0.39-0.42 : 0.53-0.60 : 0.60-0.76 : 0.78-0.97 : 0.91-1.03.

#### TYPE MATERIAL EXAMINED

Lectotype [female] of *Aethus aequalis* WALKER (present designation): [HONG KONG]: Hong Kong 6149; Type; 72. *Aethus aequalis* WALKER; Brit. Mus. Type No. 327; Lectotype det. J.A. LIS 1990 (BMNH).

#### OTHER MATERIAL EXAMINED (62 males, 47 females)

CHINA: Canton, 1 female 1 male 28 XII 08, R. MELL S.G., Zool. Mus. Berlin, det. as *Aethus subaeneus* DALL. (MNHU); Kushan, Foochow, Fuz-zhen, 3 females 2 males 14.X.1957, det. as *Macroscytus foveolus* DALL. by KERZHNER (ZIP, JAL); San-nen-Kai, Yunnan-Fou, Yunnan (China), 5 males 3 females, E. le MOULT, Museum Leiden, det. as *Macroscytus subaeneus* DALL. (RNH).

HONG KONG: Hong Kong, 1 female 1 male, J.J. WALKER, Feb.-May. 93.145 (BMNH).

INDIA: S. India, Nilgiri Hills, Cherangode, 1 male X 1950, P.S. NATHAN (CWS); Indes anglaises, Ajmer-Rajputana, 1 female, ex coll. MUELLER (IRSNB); S. India, Karikal, Karumbagaram, 1 female VII 1954, Rec. P.S. NATHAN (IRSNB); S. India, Yercaud, Shevaroy Hills, 4500ft, 1 female 2 males II/III 1955, Rec. P.S. NATHAN (IRSNB, JAL); S. India, Cinchona, Anamalai Hills, 3500ft, 1 female 2 males IV/V 1957, 5 females 8 males IX 1969, Rec. P.S. NATHAN (IRSNB, ZMA, JAL); Inde merid., Trichinopoly, 2 females 4 males, coll. NOUALHIER 1898, det. as *Macroscytus badius* (WALK.) by WE-I YANG 1935, Muséum Paris (MNHN, JAL); India or., Madura, 1 male (HNHM); Bombay, 1 male, det. as *foveola* DALL. by HORVÁTH (HNHM); Calcutta, 1 male, LOCZY 1878, det. as *foveola* DALL. by HORVÁTH (HNHM); India or., Matheran, 800m, 4 females, Biro 1902, det. as *foveola* DALL. by HORVÁTH (HNHM); Himalaya, C. Rost., Kulu, 7000f, 2 females 1 male, det. as *foveola* DALL. by HORVÁTH (HNHM); N. India, Pedong, Darjeeling, 2 males 1 female, L. DUREL, B.M. 1935-11 (BMNH, JAL); W. Almora, Kumaon, India, 1 male 1 female, H.G.C., CHAMPION Coll., B.M. 1927-409 (BMNH); S. India, Agumbe Ghat, 2000ft alt, Shimoga Dist., Mysore St., 1 female V: 1974, T.R.S. NATHAN (NSMT); South India, Madras State, Anamalai Hills, Kadamparai, 3500ft, 1 female V.1963, P. SUSAI NATHAN, Museum Leiden (RNH); Pondicherry State, Karikal, India, 1 male V-1962, P. SUSAI NATHAN, Museum Leiden (RNH); India, Kalimpong, 1 male V.1961, S. KOROVIN (ZIP); India, Barodabri, 1 female 9-11.V.1961, S.E. KOROVIN (ZIP).

NEPAL: C. Nepal, Birethanti, 1.000m alt, Kaski Dist., 1 male 13.X.1981, M. TOMOKUNI, Collected by light trap (NSMT); C-Nepal, Kathmandu Valley, Godavari 1500m, 1 female 10.6.84, HOLZSCHUH, Collection E. HEISS Innsbruck (EHC); Zentral-Nepal, Weg. v. Pokhara z. Goropani, 1 male Sept.-Okt. 1971, Ig. H. FRANZ,



ex. coll. E. HEISS (JAL); Barabise geg., Ting-Sang-La, Nepal, 1 male 1 female, lg. H. FRANZ, Collection E. HEISS Innsbruck (EHC); Südl. Dhaulagiri, Myangdi Khola, Muri, 2100-2300m, 1 male 2 females III/IV 1970 (JMC, JAL); Nepal, KTM-Balaju, 1400m, 4 males 1 female 23.III.1973 (JMC, JAL); 104 KTM Balaju Park, 1400m, 1 male 17 März 1980, Mischwald, MARTENS & AUSOBSKY leg. (JMC); Kathmandu-Tal, westlicher Teil, 1300-1400m, 1 male 17-19.Feb.1974 (JMC); 344 Taplejung Distr., confluence of Kabeli Khola and Tada Khola, 1000-1050m, mixed broad-leaved forest, 1 male 23-25.Apr.88, MARTENS & SCHAWALLER (JMC).

BHUTAN: British Bhutan, 6 females 2 males, Maria BASTI 1900, ex Museo R. OBERTHUR (IRSNB, JAL); Bhoutan, Mt Durel, 2 female 2 male, Maria BASTI, R. OBERTHUR 1898, det. as *Macroscytus badius* by We-YANG 1935, Muséum Paris (MNHN, JAL); India or., Madura, 1 male, STAUDINGER & BANG-HAAS, det. as *Macroscytus foveolus* DALL. by KERZHNER (ZIP).

SRI LANKA: Punduloya, Ceylon, 1 male, ATKINSON Collection, Bought 1895 (HEC); Ceylon, Uva P., Madulsima, 1 male 23 XII 08, T.B.F. (BMNH); Ceylan, Nuw Eliya, 1 male 2-3.1907, E. BUGNION, Muséum Paris, coll. BUGNION (MNHN).

THAILAND: Chiang Mai Province, Doi Inthanon N.P., main road, 1 male 7.X.1981, 1900', Zool. Mus. Copenhagen leg. (ZMC); Thailand, Doi Inthanon, 1.670m alt, 1 male 2 females 21.X.1983, M. OWADA, at light (NSMT, JAL); Shan States, Manders, 1 male, SHARP Coll., 1905-313 (BMNH).

LAOS: Laos, Ban Ban, 1 female 3.I.1919, R.V. de SALVAZA, Brit. Mus. 1922-112 (BMNH).

VIETNAM: Tonkin, reg. de Hoa-Binh, 1 male, A. de COOMAN, 1927, Muséum Paris (MNHN); Vietnam, Tam Dao, 1 female VIII 963, O. KABAKOV (ZIP); Plei Ku, Annam, Indo-China, 4 males, E. le MOULT, Museum Leiden, det. as *Macroscytus subaeneus* DALL. (RNH).

DISTRIBUTION. - Nepal, Bhutan, India, Sri Lanka, South China (Yunnan, Guangdong, Fujian), Hong Kong, Laos, Vietnam, Cambodia, Thailand.

BIOLOGICAL DATA. - Four specimens have been collected at light, two others in a mountain mixed forest.

REMARKS. - Hitherto *M. aequalis* WALKER has been treated as a synonym of *M. foveolus* (DALL.), since nobody has studied the type material of *Aethus foveolus* DALL. The latter appeared not to belong to the genus *Macroscytus*, thus the species in question should be treated as the distinct one, and should take the WALKER's name. Unfortunately, the lectotype specimen of *Aethus aequalis* is without abdomen; according to JOSIFOV & KERZHNER (1978: 189) it was a female. The second syntype female of *A. aequalis* (from Japan) pertains actually to *Macroscytus japonensis* SCOTT.

### ***Macroscytus bipunctatus*, new species**

DIAGNOSIS. - Among the species with the single submarginal setigerous puncture on the costa this one can be easily recognized by the intensely ochraceous or yellowish brown umbones of pronotum, and the distinctly punctured head.

DESCRIPTION. - Body black, corium usually more brownish, umbones of pronotum intensely ochraceous or yellowish brown.

Head dorsally distinctly punctured, except clypeus and vertex; clypeus as long as paraclypei; each paraclypeus with the single preocular submarginal setigerous puncture; eyes brown or blackish brown, ocular index 2.60-3.22; ocelli reddish brown, interocellar index 4.7-5.8, ocellar index 5.4-6.3; antennae brown, segments apically somewhat paler than basally, 3rd segment longer than the 2nd; rostrum brown, reaching anterior margin of middle coxae.

Pronotum distinctly narrowed apically; disc with deep punctures distinctly larger than those on head; umbones and posterior margin impunctate; postmedian transverse impression absent; umbones intensely ochraceous or yellowish brown; each lateral margin with 5-6 submarginal setigerous punctures.

Scutellum densely punctured, punctures deep, slightly larger than or as large as



those on pronotum; apex and anterolateral angles impunctate.

Corium usually more brownish than both pronotum and scutellum; clavus with one complete and two partial rows of punctures; mesocorium with two rows of punctures paralleling clavo-corial suture, mesocorial disc almost evenly punctured; exocorium densely punctured; all punctures smaller than those on scutellum; costa with the single setigerous puncture; membrane browned, surpassing the tip of abdomen.

Propleuron with deep large punctures in depression and on posterior convexity, the anterior laterally with smaller punctures; evaporatoria typical of the genus, evaporative areas longitudinally striated, lateral area of metapleuron impunctate, lamella weakly punctured.

Sternites with distinct punctures anterior, posterior and mesad of spiracles.

Posterior femora with large subapical tooth on dorsal margin apparent in both sexes, posterior tibiae without tubercles.

Measurements (male and female respectively): body length 11.27, 9.80-11.76; body width 5.96, 5.19-5.93; head length 1.23, 1.12-1.52; head width 2.35, 2.11-2.50; pronotum length 3.19, 2.55-3.33; pronotum width 5.49, 4.61-5.69; scutellum length 4.51, 3.77-4.66; scutellum width 3.53, 2.99-3.78; antennal segments: 0.52 : 0.69 : 0.84 : 1.13 : 1.24, 0.46-0.55 : 0.59-0.74 : 0.78-0.84 : 1.08-1.14 : 1.19-1.26.

#### TYPE MATERIAL EXAMINED

Holotype male: [MALAYSIA]: Borneo, Sabah, Mts. Crocker, 16 miles N.W. of Keningau, 1.400m, 21.V.1983, Shinji NAGAI (NSMT).

Paratypes: 2 females: [MALAYSIA]: the same data as the holotype (NSMT, JAL); 1 female: [MALAYSIA]: Malaysia Sabah, 1/2 way Rd Melligan - Long Pa Sia, 115.42'E 4.35'N, 15 Dec 1986, Alt 1200m, ML, J. HUISMAN, Museum Leiden (RNH); 1 female: [MALAYSIA]: Malaysia Sabah, Gn Kinabalu, Sg. Liwagu nr Kundasang bridges, 116.34'E 6.00'N, 1185m, ML, 23 Nov 1986-B, J. HUISMAN, Museum Leiden (RNH); 1 female: [MALAYSIA]: Malaysia Sabah, Long Pa Sia, between LPS-L Samando (2km from Sarawak border), Basecamp II, 4.20'N 11.41'E, 1520m, 22-24 Oct 1986, J. HUISMAN, Museum Leiden (RNH); 1 female: [INDONESIA]: Sanga Sanga, Moorjawa, E. Borneo, H.D. JENSEN, 1906-45 (JAL).

DISTRIBUTION. - Borneo.

### ***Macroscytus borneensis*, new species**

(figs. 360-361)

DIAGNOSIS. - Among the species with the single preocular submarginal setigerous puncture on each paraclypeus, this one can be recognized by the set of following characters: the head impunctate; the 3rd antennal segment 1.40-1.65 times longer than the 2nd; the ocellar index ranging from 3.2 to 4.3; the pronotum uniformly coloured, with 3-4 submarginal setigerous punctures on each lateral margin; the costa with 1-2 setigerous punctures; the scutellum densely punctured; the sternites impunctate, except for the triangular patches anterior and posterior to spiracles; the body length from 8.95 to 12.05 mm; the 2nd conjunctival appendages of penis as in fig. 361.

DESCRIPTION. - Body (fig. 360) from castaneous to almost black, corium usually more brownish than pronotum and scutellum.

Head alutaceous, dorsally with numerous evenly spaced and almost invisible tiny punctures; each paraclypeus with three primary setigerous punctures, among them the single preocular; clypeus as long as paraclypei; eyes brownish black, ocular index 1.73-2.08 (in male) or 1.78-2.38 (in female); ocelli brown or yellowish

brown, interocellar index 5.7-8.4 in male, and 5.9-7.5 in female, ocellar index 3.2-4.3; antennae brown or pale brown, 3rd segment 1.40-1.63 times longer than the 2nd; rostrum brown or yellowish brown, reaching middle coxae.

Pronotum with tips of umbones paler than head; transverse postmedian impression laterally deep and distinct, bearing numerous punctures; puncturing of disc as in fig. 360, anterior lobe with a patch of punctures behind head and several punctures laterally, posterior lobe with numerous scattered punctures; each lateral margin with 3-4 submarginal setigerous punctures (2-3 on anterior lobe, 1 on the posterior).

Scutellum distinctly punctured, punctures almost of the same size as those on pronotal disc; anterolateral angles impunctate; apex sharp, with a few small punctures.

Corium usually more brownish than pronotum and scutellum; clavus with one complete, and 1-2 partial rows of punctures; mesocorium almost evenly punctured; exocorium almost impunctate; punctures smaller than those on pronotum and scutellum; costa with 1-2 setigerous punctures; membrane hyaline, browned, distinctly surpassing the tip of abdomen.

Propleuron distinctly punctured; depression and posterior convexity with large punctures, anterior convexity dulled by numerous tiny punctures; evaporatoria distinctly wrinkled, lateral area of metapleuron impunctate, lamella weakly punctured.

Sternites laterally wrinkled, each with the patch of tiny punctures anterior and posterior to spiracles (densely on the sternites III, IV and V, weakly on the sternite VI, a few punctures only on the sternite VII); each suture with a row of tiny punctures.

Posterior femora with numerous small teeth on ventral margin, and distinct subapical tooth on the dorsal; posterior tibiae with one (in female) or several (in male) small tubercles.

Apical part of penis and the 2nd conjunctival appendage as in fig. 361.

Measurements (male and female respectively): body length 8.95-12.05, 9.81-11.27; body width 4.70-6.08, 5.50-5.69; head length 1.33-1.57, 1.54-1.72; head width 2.07-2.45, 2.35-2.45; pronotum length 2.49-3.19, 2.80-3.05; pronotum width 4.50-5.64, 5.15-5.40; scutellum length 3.54-4.75, 4.44-4.80; scutellum width 2.85-3.92, 3.24-3.53; antennal segments: 0.45-0.50 : 0.52-0.68 : 0.81-0.97 : 0.99-1.29 : 1.18-1.32, 0.49-0.52 : 0.57-0.62 : 0.86-0.89 : 1.06-1.13 : 1.19-1.31.

#### TYPE MATERIAL EXAMINED

**Holotype male:** [MALAYSIA]: N. Borneo, Samarang, Nr. Sandakan, light, 6th July 1927, C.B.K. & H.M.P., F.M.S. Museum; Ex F.M.S. Museum, B.M. 1955-354 (BMNH).

**Paratypes:** 1 female: [MALAYSIA]: Sarawak, Kuching, 9.13, J.M. BRYAN, B.M. 1931-150; Kuching, 9.13 (BMNH); 8 males 9 females: [MALAYSIA]: Malaya, Kuala Lumpur, April 4th 1931, Ex F.M.S. Museum, B.M. 1955-354 (BMNH, JAL); 1 male: [MALAYSIA]: Malay Penin: Selangor, Bukit Kutu, 3450ft, April 19th 1926, H.M. PENDELURY, Ex Coll. F.M.S. Museums (BMNH); 1 male: [MALAYSIA]: Malaysia -SW. Sabah, nr Long Pa Sia (West), c. 1200m, 2-14.IV.1987, Mal. trap 7, RMNH'87, c.v. ACHTENBERG (RNH); 2 males: [MALAYSIA]: S. Sabah, Beaufort, 105km S of Long Pa Sia area: confl. Pa Sia - Matang, 4.24°N 115.43°E, 10 Apr 1987, VAN TOL & HUISMAN, At light, semicultivated area, 1000m asl, Near disturbed evergreen tropical rain forest, RMNH Leiden (RNH); 1 male 1 female: [BRUNEI]: Brunei, Ulu, Temburong, II-III.1982; M.C. DAY, B.M. 1983-75 (BMNH, JAL).

**DISTRIBUTION.** - Malaya, Borneo (Sarawak, Sabah, Brunei).

**BIOLOGICAL DATA.** - Two of the type specimens have been collected at light in semicultivated area, near disturbed evergreen tropical rainforest.

***Macroscytus celebensis* BREDDIN**

(figs. 358, 362)

*Macroscytus celebensis* BREDDIN, 1906: 36; BERGROTH, 1908: 148; LIS, 1991e: 307.

**DIAGNOSIS.** - This species differs from all Oriental representatives of the genus in the absence of setigerous punctures on the costa.

**DESCRIPTION.** - Head black or blackish brown; paraclypei as long as clypeus, dorsally impunctate except for the three primary setigerous punctures, among them the single preocular; eyes brown or blackish brown, ocular index 3.15-3.52; ocelli small, interocellar index 3.3-4.2; antennae brown, segments apically somewhat paler, 5th segment almost entirely yellowish brown; rostrum brown, reaching anterior margin of middle coxae.

Pronotum black or blackish brown, except more or less broad transverse yellowish brown band at posterior margin (fig. 358); lateral parts somewhat flattened; disc undivided into lobes, transverse postmedian impression absent; each lateral margin with 2 submarginal setigerous punctures on anterior half and one at subbasal angle of the posterior; anterior part with numerous small punctures forming an arcuate subapical transverse band and irregular patch on either side; posterior half with a transverse broad band of small punctures not reaching the posterior margin.

Scutellum dark castaneous, its disc with numerous coarse punctures larger than those on the pronotal disc; base and apex impunctate, the latter somewhat narrowed apically.

Corium pale brown, paler than scutellum; clavus with one complete and two partial rows of punctures; mesocorium and exocorium densely punctured with dark brown punctures slightly smaller than those on scutellum; costa somewhat flattened, without setigerous punctures; membrane brown, semihyaline, varying in length.

Propleuron with numerous small punctures on anterior convexity; depression with crowded coarse punctures which become finer and sparser posteriorly; evaporatoria as in fig. 362.

Sternites black or blackish brown, laterally slightly wrinkled, and with a patch of punctures posterior and anterior to spiracle.

Legs black or blackish brown, tarsi brown, posterior femora subapically with small tooth.

Measurements (female only): body length 8.05-9.80, body width 4.75-5.25, head length 1.25-1.47, head width 1.97-2.00, pronotum length 2.44-2.94, pronotum width 4.19-4.75, scutellum length 3.24-3.82, scutellum width 2.71-3.14, antennal segments: 0.49-0.49 : 0.55-0.56 : 0.66-0.67 : 0.81-0.86 : 0.98-0.99.

**MATERIAL EXAMINED (3 females)**

INDONESIA: Sulawesi Utara, Dumoga-Bone Nat. Park, Poniki trail (1600m), X-1985, Station: 029, 1 female, Project WALLACE, det. as *Macroscytus celebensis* BREDDIN by J.A. LIS (IRSNB); Indonesia, Sulawesi Is., 1 female X-XI.1985, S. NAGAI (NSMT); N. Sulawesi, Dumoga Bone NP, Zebra, 1 female 10-20.XI.1985, van STALLE et al., dung trap, RMNH/pw- (RNH).

**DISTRIBUTION.** - Sulawesi.

**BIOLOGICAL DATA.** - One examined specimen has been collected from a dung trap.

**REMARKS.** - The species was redescribed only recently (LIS, 1991e); the type material has not been found.

***Macroscytus dalawanus*, new species**

(figs. 363-365)

*Macroscytus pfeifferi*, not of SIGNORET: FROESCHNER, 1967: 21.

**DIAGNOSIS.** - The species is best diagnosed by the set of following characters: each paratype with the single preocular submarginal setigerous puncture; the costa with 2 setigerous punctures; the pronotum uniformly coloured, with 4-6 submarginal setigerous punctures on each lateral margin; the ocellar index from 4.0 to 4.6; the sternites with the triangular patches of punctures only posterior to the spiracles; the body length from 9.36 to 11.57 mm; the 2nd conjunctival appendages as in fig. 365.

**DESCRIPTION.** - Body from castaneous to blackish brown, corium usually more brownish than pronotum and scutellum.

Head dorsally alutaceous, slightly wrinkled on paratype, impunctate except for three primary setigerous punctures; eyes from brown to blackish brown, ocular index 1.77-2.15 (in male) or 1.87-2.32 (in female); ocelli brown or reddish brown, interocellar index 6.6-8.0, ocellar index 4.0-4.6; antennae brown or dark brown, 3rd segment longer than the 2nd; rostrum brown, reaching or slightly surpassing middle coxae.

Pronotum sometimes with umbones slightly paler than its disc; postmedian transverse impression distinct, but not as deep as in *M. noonadanae*; anterior lobe with small patch of punctures behind head, and a few punctures laterally; posterior lobe with punctures forming a transverse band; each lateral margin with a row of 4-6 submarginal setigerous punctures.

Scutellum distinctly punctured with numerous large punctures, basal part and apex impunctate.

Corium slightly paler (especially exocorium and clavus) than pronotum and scutellum; clavus with one complete and two partial rows of punctures; mesocorial disc with small, evenly spaced punctures; mesocorium weakly punctured or almost impunctate; costa with 2 setigerous punctures; membrane milky brown or brown, surpassing the posterior extremity of abdomen.

Propleuron alutaceous, depression and basal part of posterior convexity with numerous coarse punctures; evaporatoria and apex of peritreme similar to those of *M. pfeifferi*.

Sternites more or less wrinkled, with triangular patches of punctures only posterior to spiracles (V, VI and VII sternites).

Male posterior femora with distinct subapical tooth on dorsal margin, and several (4-5) smaller teeth on the ventral, posterior tibiae with distinct subbasal tubercle (fig. 363); female posterior femora with small subapical tooth on dorsal margin, and several setae on the ventral, posterior tibiae without tubercles.

Paramere as in fig. 364; penis and the 2nd conjunctival appendages as in fig. 365.

Measurements (male and female respectively): body length 9.36-11.57, 9.71-10.78; body width 4.71-5.88, 5.40-5.54; head length 1.13-1.37, 1.48-1.55; head width 2.11-2.50, 2.36-2.43; pronotum length 2.50-2.94, 2.75-2.95; pronotum width 4.39-5.49, 5.10-5.25; scutellum length 3.77-4.61, 3.95-4.66; scutellum width 2.94-3.58, 3.23-3.60; antennal segments: 0.43-0.56 : 0.65-0.67 : 0.69-0.89 : 0.93-1.14 : 1.02-1.25, 0.45-0.49 : 0.55-0.73 : 0.74-0.88 : 0.94-1.06 : 1.10-1.12.

## TYPE MATERIAL EXAMINED

Holotype male: [INDONESIA]: Java, Wynkoopsbay, II-1937, coll. R.I.Sc.N.B. (IRSNB).

Paratypes: 1 female: [INDONESIA]: Java, Wynkoopsbay, II-1937, coll. R.I.Sc.N.B. (JAL); 1 female: [INDONESIA]: Java, Ardja-Sari, Preanger; coll. Dr. D. MAC GILLAVRY (ZMA); 1 male: [INDONESIA]: Java, Soekaboemi, Dec. 1935, E. Le MOULT, Museum Leiden, det. as *Macroscytus javanus* MAYR (RNH); 2 males: [INDONESIA]: E. Kalimantan, Mt. Pemantus, 45km W of Sotek, 24 Dec. 1980, J. AOKI (NSMT); 1 male: [MALAYSIA]: Malay Penin., Ex Coll. Agr. Dept., Kuala Lumpur, at light, Jan. 9th 1919, Labelled at Sel. Mus. K.L., Ex F.M.S. Museum, B.M. 1955-354 (BMNH); 1 male: [MALAYSIA]: Malay Penin., Ex Coll. Agr. Dept., Kuala Lumpur, at light, Sept. 30th 1918, Labelled at Sel. Mus. K.L., Ex F.M.S. Museum, B.M. 1955-354 (JAL); 1 male: [MALAYSIA]: N. Borneo, Sabah, Sandakan Dist., Rumidi, R. LABUK, 16-30.IX.1973 (JAL); 2 males 1 female: [MALAYSIA]: S. Sabah, Beaufort, 105km S of Long Pa Sia area: confl. Pa Sia - Matang, 4.24°N 115.43°E, 10 Apr 1987, VAN TOL & HUISMAN, At light, semicultivated area, 1000m asl, Near disturbed evergreen tropical rain forest, RMNH Leiden (RNH); 1 male: [MALAYSIA]: Nature Trail, 150m, 28.XI.1989, Borneo Sabah, Danum Valley, 70km W Lahat Datu, M.J.&J.P. DUFFELS, sample: Sab.44, open area in primary rainforest, understorey/canopy, at light (ZMA); 1 female: [MALAYSIA]: Malaysia Sabah, Long Pa Sia, Airstrip along S Pa Sia, 4.25°N 115.43°E, 1090m, 14 Oct. 1986, J. HUISMAN et al., Museum Leiden (RNH); 1 male: [MALAYSIA]: Malaysia Sabah, Long Pa Sia, Banks of S Pa Sia, sec. veg., 4.25°N 115.43°E, 1090m, 14-28 Oct. 1986, J. HUISMAN, Museum Leiden (RNH); 1 male: [MALAYSIA]: N. Borneo, Sabah, 10km SE Ranau, Kg. Nalapak, Sg. Kananapun, ML-light, 116.47°E 5.58°N, 350m, 7 Feb. 1987/a, J. HUISMAN, Museum Leiden (RNH); 1 male: [MALAYSIA]: Borneo, Sarawak, 16km N of Bario, Long Rapun, pond nr Sg. Dapur, ML-light, 115.35°E 3.53°N, 1200m, 21 Feb 1987/b, J. HUISMAN, Museum Leiden (RNH); 1 male: [PHILIPPINES]: Philippines, Balabac, Dalawan Bay, 7. Oct. 1961, Noona Dan Exp. 61-62, Caught by Mercury-light 19.00-06.00, det. as *Macroscytus pfeifferi* SIGN. by FROESCHNER 65 (ZMC); 2 males 1 female: [PHILIPPINES]: Philippines, Trident Mines, 500m, nr Narra, C. Palawan Is., 5.IX.1985, By light trap, M. TOMOKUNI (NSMT, JAL).

DISTRIBUTION. - Malaya, Java, Borneo (Sabah, Sarawak, Kalimantan), Philippines.

BIOLOGICAL DATA. - Numerous specimens have been collected at light in different types of vegetation (open area in primary rainforest, semicultivated area near disturbed evergreen rainforest, secondary vegetation).

REMARKS. - I had an opportunity to study one out of two specimens collected in Balabac (Dalawan Bay) and determined by FROESCHNER (1967) as *M. pfeifferi*; it also represents the new species described above.

***Macroscytus dominiqueae* Lis**  
(figs. 366-370)

*Macroscytus dominiqueae* Lis, 1991c: 209.

DIAGNOSIS. - This species belongs to the group of species with the single preocular submarginal setigerous puncture on each paraclypeus, the uniformly coloured pronotum bearing 5-6 submarginal setigerous punctures on each lateral margins, and the costa with 2 setigerous punctures. *M. dominiqueae* is closely related to *M. aequalis* in the presence of distinct punctures on the lateral two thirds of sternites. The two species can be separated by the different relative length of the 2nd and 3rd antennal segment (the 3rd is 1.00-1.29 times longer than the 2nd in *M. aequalis*, while 1.30-1.54 times in *M. dominiqueae*), the different size of eyes and ocelli (smaller in *M. aequalis*, larger in *M. dominiqueae*), and the different ocular index, interocellar index, and ocellar index (2.20-3.10, 4.8-7.0, 4.5-6.1 respectively in *M. aequalis*; 1.82-2.40, 7.4-11.0, 3.5-5.0 respectively in *M. dominiqueae*).

DESCRIPTION. - Body from castaneous to blackish brown, similar to *M. aequalis* in outline (fig. 366).

Head dorsally impunctate except for three primary setigerous punctures; clypeus



equal in length to paraclypei; eyes brown or blackish brown, ocular index 1.82-2.12 (in male) or 1.93-2.40 (in female); ocelli red or brown, interocellar index about 7.4-11.0, ocellar index 3.5-5.0; antennae brown, 3rd segment 1.30-1.54 times longer than the 2nd; rostrum brown, reaching middle coxae.

Pronotum with postmedian transverse impression bearing a row of punctures; anterior lobe with distinct punctures subapically and laterally; posterior lobe with irregularly scattered punctures (fig. 366); each lateral margin with 5-6 submarginal setigerous punctures.

Scutellum with numerous punctures irregularly scattered over most of surface, except base and apex.

Corium usually more brownish than pronotum and scutellum; punctures smaller than those on scutellum; costa with 2 setigerous punctures; membrane hyaline, fuscous, surpassing the apex of abdomen.

Propleuron alutaceous, depression and basal part of posterior convexity densely punctured; apex of peritreme as in fig. 368.

Sternites smooth in the middle, sides distinctly wrinkled and with irregularly spaced coarse punctures.

Legs with anterior and middle pair not specifically modified; male posterior femora with distinct subapical tooth on dorsal margin, and a few tooth on the ventral, tibiae with several small subbasal tubercles (fig. 367); female femora with small, sometimes indistinct subapical tooth on dorsal margin, and several setae on the ventral, tibiae without tubercles.

Paramere as in fig. 369, penis as in fig. 370.

Measurements (male and female respectively): body length 9.43-12.25, 9.05-11.08; body width 5.35-6.61, 5.01-5.85; head length 1.51-1.62, 1.39-1.62; head width 2.37-2.60, 2.19-2.42; pronotum length 2.73-3.43, 2.41-3.20; pronotum width 5.04-5.93, 4.75-5.50; scutellum length 4.30-4.75, 3.66-4.51; scutellum width 3.30-3.72, 2.95-3.55; antennal segments 0.41-0.47 : 0.57-0.72 : 0.75-0.94 : 1.08-1.11 : 1.23-1.26, 0.41-0.42 : 0.46-0.60 : 0.71-0.89 : 0.95-1.03 : 1.09-1.12.

#### TYPE MATERIAL EXAMINED

Holotype male of *Macroscytus dominiqueae* Lis: [VIETNAM]: Tonkin, Cho-Ganh, L. Duport, Muséum Paris, coll. E. FLEUTIAUX 1919, *Macroscytus dominiqueae* Lis, det. J.A. Lis; Holotype (MNHN).

Paratype female: [VIETNAM]: the same data as the holotype (JAL).

#### OTHER MATERIAL EXAMINED (13 males, 17 females)

INDIA: Kairhana, Assam, 1 female 8.III.12, von Kik (ZIP); India, Barodabri, 2 females 9-11.V.1961, S. KOROVIN (ZIP, JAL).

SOUTH CHINA: Haut-Tonkin et Bas Yunnan, Entce Man-Hao, Muong-Hum (pres Lao-Kay) et Ban-Nam-Coun, 1 female, Lieut. LESOURT 1905, Muséum Paris (MNHN); Yunnan, env. Dadugan, 850m, 1 female 5.5.57, D. PANFILOV (ZIP).

HONG KONG: Honih Kong, 1 female, 92-114 (BMNH).

VIETNAM: Tonkin, reg. de Hoa-Binh, 2 males, A. de COOMAN 1928, Muséum Paris (MNHN, JAL); Tonkin, Hoa-Binh, 1 female (J.de COOMAN), R. OBERTHUR 1919, Muséum Paris (MNHN); Tonkin, Bac Kan (Song-Kao), 1 female 1903, C. BERTHREAND, Muséum Paris (MNHN); Sud Vietnam, Bobla, 1 female March 30.1962, S. INONE leg. (NSMT).

LAOS: Luang Prabang, Ko Kieng, 2 males 1 female 29.XI.1917, R.V. de SALVAZA, Brit. Mus. 1922-112 (BMNH, JAL).

CAMBODIA: Indo-China, Kompong Kedey, 1 male 1917-98, R.V. de SALVAZA (BMNH).

THAILAND: Loei Province, Phu Luang Wildlife Sanctuary, 3 females 2 males 8-14.X.1984, 700-900m, KARSHOLT, LOMHOLDT & NIELSEN leg., Zool. Mus. Copenhagen (ZMC, JAL); Thailand, 240km NW Bangkok, 25km NW Lan-Sak, leg. THIELEN, 1 female II.1989, at light (NHMW); Thailand, 170km NW Bangkok, 3km W Ban Rai, 150m, Licht, 1 femlae (.1991, leg. THIELEN (NhMW).

MALAYSIA: Malaya, Pahang F.M.S., Cameron Highlands, 1 male 5/12/1939, 4800-5000ft, light, 1 male 18/5/1935, 4200ft, light, 2 males 2 females 4500-4800ft 23.6.1935, 1 male Janah Rala 4800ft 19.7.1938, 1 male Bintang, light 7.X.1935, H.M. PENDELBURY Coll., F.M.S. Museum, ex F.M.S. Museum, B.M. 1955-354 (BMNH, JAL).



DISTRIBUTION. - India, South China (Yunnan), Hong Kong, Laos, Vietnam, Cambodia, Thailand, Malaya.

***Macroscytus gibbulus* (ELLENRIEDER), new combination**

*Hahnia gibbula* ELLENRIEDER, 1862: 140; WALKER, 1867: 170; STÅL, 1876: 19; SIGNORET, 1883a: 482; LETHIERRY & SEVERIN, 1893: 71.

Species unknown to me in nature; its type material has not been traced.

The original description and the figure of the type specimen permit placing this species within the *aequalis*-group, among the species with distinctly developed postmedian transverse impression on the pronotum. *M. gibbulus* seems to be allied to *M. sumatranus*, but differs from the latter in the smaller body (about 8 mm in length; 8.43-10.78 mm in *M. sumatranus*), and the 3rd antennal segment almost as long as the 2nd (3rd is distinctly longer than 2nd in *M. sumatranus*).

Since the original description is short, and the figure of total habitus may be in some aspects erroneous, only a study of the type material (if still exists) can solve the problem of identity of *M. gibbulus* with other species of the *aequalis*-group.

ORIGINAL DESCRIPTION. - Long: 0,008; *Nigronitens*, *capite longitudinaliter rugosulo; sulco thoracis arcuato punctulato; eminentia noduliformi ad marginem thoracis anticam, simili in occipite correspondente; thorace post sulcum transversalem raro punctulato, scutello punctulis confertioribus antrorsum cessantibus. Parte elytrorum coriacea picea punctulata, parte membranacea albescente hyalina. Subtus fusconigra. Antennis et pedibus piceis, tibiis posticis fere duplo longioribus, quam mediae. Sumatra, Lahat Augustus.*

DISTRIBUTION. - Sumatra.

***Macroscytus japonensis* SCOTT**  
(figs. 371-372)

*Aethus foveolus*, not of DALLAS: WALKER, 1867 [part].

*Aethus aequalis* WALKER, 1867: 159 [syntype from Japan]; LETHIERRY & SEVERIN, 1893: 81 [part]; JOSIFOV & KERZHNER, 1978: 189 [part].

*Aethus badius* WALKER, 1867: 159 [syntype from N. China].

*Macroscytus japonensis* SCOTT, 1874: 294; JOSIFOV & KERZHNER, 1978: 188.

*Macroscytus javanus*, not of MAYR: SIGNORET, 1883a: 478 [part]; LETHIERRY & SEVERIN, 1893: 71 [part].

*Macroscytus niponensis* SIGNORET, 1883a: 475, syn. with *M. japonensis* by HORVÁTH, 1919: 241.

*Macroscytus Niponensis*: LETHIERRY & SEVERIN, 1893: 71.

*Macroscytus fraterculus* HORVÁTH, 1919: 241, syn. with *M. japonensis* by JOSIFOV & KERZHNER, 1978: 189.

*Macroscytus subaeneus*, not of DALLAS: ESAKI & ISHIHARA, 1951: 29; TAKARA & HIDAKA, 1960: 182; HSIAO et al., 1977: 46 [part]; TOMOKUNI, 1979: 104, 1981: 104, 1985: 154.

*Macroscytus badius*, not of DALLAS: MOIZUDDIN & AHMAD, 1990: 325 [part].

*Macroscytus* [sic!] *subaenus* [sic!], not of DALLAS: LIN & ZHANG, 1992: 218.

DIAGNOSIS. - This East Palaearctic species belongs to the group of species with the single preocular submarginal setigerous puncture on each paraclypeus, the uniformly coloured pronotum bearing 5-6 submarginal setigerous punctures on each lateral margin, the costa bearing 2 setigerous punctures, and the sternites each with the patch of tiny punctures posterior to the spiracles. Within this group *M. japonensis* can be recognized by the densely punctured scutellum, the small ocelli (ocellar index 5.1-8.5), the body length exceeding 8.0 mm, and by the 2nd conjunctival appendages as in fig. 372.

DESCRIPTION. - Body from light castaneous to almost black, 8.10-10.5 mm in length.

Head impunctate except for three primary setigerous punctures, lateral parts sometimes slightly wrinkled and with a few punctures; clypeus as long as or slightly shorter than paraclypei; eyes dark castaneous or blackish brown, ocular index 1.98-3.10; ocelli yellowish brown or reddish brown, interocellar index 5.5-9.1, ocellar index 5.1-8.5; antennae brown, dark brown or reddish brown, 3rd segment about 1.10-1.30 times longer than the 2nd; rostrum brown or castaneous, reaching middle coxae.

Pronotum with umbones and posterior margin sometimes slightly paler than the disc; postmedian transverse impression absent or slightly marked laterally; calli slightly elevated; each lateral margin with a row of 5-6 submarginal setigerous punctures.

Scutellum evenly punctured, punctures slightly larger than those on pronotum, apex and basal part impunctate.

Corium either of the same color as or slightly paler than pronotum and scutellum; clavus with one complete and two or three partial rows of punctures; exocorium and middle part of mesocorium densely, almost evenly, punctured, punctures smaller than those on scutellum; costa with 2 setigerous punctures; membrane semihyaline, brown, usually with darker patches, slightly surpassing the tip of abdomen.

Propleuron with punctures in depression; evaporatoria and apex of peritreme typical of the genus.

Sternites polished in the middle, laterally with punctures forming the patch posterior to spiracles, a few punctures present also laterally to spiracles and along sutures.

Male posterior tibiae subapically with distinct small tubercle, posterior femora with several small teeth on ventral margin and one subapical tooth on the dorsal; female posterior femora without teeth, posterior tibiae without tubercles.

Paramere as in fig. 371; penis and the 2nd conjunctival appendage as in fig. 372.

#### TYPE MATERIAL EXAMINED

Lectotype female of *Macroscytus japonensis* SCOTT (present designation): [JAPAN]: Type; Type, SCOTT Coll. 88-11; *Macroscytus japonensis*; Brit. Mus. Type No. Hem. 328 (BMNH).

Lectotype female of *Macroscytus niponensis* SIGNORET (present designation): [JAPAN]: v. SIEBOLD, Japan; *Macroscytus niponensis* mss. VOLLENHOV.; 35; Museum Leiden, *Macroscytus niponensis* SIGN.; cotypus (RNH).

Syntype male of *Aethus badius* WALKER: [CHINA]: Paratype; N. China; *Aethus badius* WALKER's catal. (BMNH).

Syntype female of *Aethus aequalis* WALKER: [JAPAN]: Paratype; Japan; *Aethus aequalis* WALKER's catal. (BMNH).

#### OTHER MATERIAL EXAMINED (18 males, 24 females)

JAPAN: Japan, 1 female, DÖNITZ (MNHU); Japan, 1 female, Zool. Mus. Berlin (MNHU); Japan, 2 males, coll. SIGNORET, det. as *niponensis* by SIGNORET (NhMW).

CHINA: Gan Chouen Fou, Anshunfu, 2 females, P. CAVALERIE 1912, Muséum Paris (MNHN, JAL); Peking, 1 female 1 male VII 1913, SCHOEDE u. MÜLLER S.G., Zool. Mus. Berlin (MNHU); Peking, 1 male, Zool. Mus. Berlin (MNHU); China, Kiautschou, Tsingtau u. Umg., 1 male, GLANE S.G., Zool. Mus. Berlin (MNHU); Chekiang, Hangtcheou [=Hangzhou], 1 female, A. PICHON 1925, Muséum Paris (MNHN); Chine, Chen-Si, 3 males, A. DAVID 1875, Muséum Paris (MNHN, JAL); China, 2 females, Coll. SIGNORET, det. as *javanus* by SIGNORET (NhMW); Amoy, China, Chenfu-Wu, 1 male, B.M. 1959-186, Cyd. 11, det. as *Macroscytus subaeneus* DALL. by R.J. IZZARD 1935 (BMNH); Shanghai, China, 2 males, det. as *Macroscytus subaeneus* DALL., Museum Leiden (RNH); Sichuan, Ulian, Utschan-Tschou, 1 male 18IX93, POMANIN (ZIP); Kouy-Tcheou, Kouy Yang, 1 male, P.P. CAVALERIE et FORTUNAT 1906, Museum Paris (MNHN); Centr. China, 1 female, Coll. NONFRIED (RNH); Kansu, Chengshien, 1 female, det. as *Macroscytus subaeneus* DALL., Museum Leiden (RNH); Nanning Kwang., China, 1 female, E. le MOULT, Museum Leiden,

det. as *Macroscytus subaeneus* DALL. (RNH); China, 35km NW Peking, Fragrant Hills, 1 female (NhMW); Formosa, 8548, 1 female, DISTANT Coll. 1911-383, det. as *transversus* BURM. (BMNH); Formosa, Taihanroku, 1 female 8-18.IV.1906, Hans SAUTER, 1919-234 (BMNH); Formosa, Teraso, 1 female 2 males II.1909, SAUTER, det. as *Macroscytus subaeneus* (HNHM); Taiwan, Kaohsiung, Shanping, 640m, 1 female 1-10 May 1988, R. DAVIDSON, C. YOUNG, J. RAWLINS, Carnegie Museum (CMNH).

NORTH BURMA: N. Burma, Adung Valley, 6.000ft., 1 female 12-X-1931, Lord CRANBROOK, B.M. 1932-196 (BMNH).

VIETNAM: Tonkin Centr., Env. de Yen-Bai, 1 male, A. WEISS 1901, Muséum Paris (MNHN); Tonkin, Reg. de Yen-Bay, 1 female, Lieut. POIRMEUR 1908, Muséum Paris (MNHN); Tonkin, Hoa-Binh, J. de COOMAN, 1 female, R. OBERTHUR 1919, Muséum Paris (MNHN); Haut-Tonkin, Lao-Kay, 1 female, Vitalis DE SALVAZA, Mme VUILLET 1920, Muséum Paris (MNHN); Vietnam, Pr. Annam, Than Hoa, 1 female, ex coll. OBERTHUR, coll. R.I.Sc.N.B. (IRSNB); Tonkin, Phu Lang Huong, 1 female 11 Mai 07, 4178, Collection E. de BERGEVIN, det. as *Macroscytus transversus* BURM. (MNHN); N-Vietnam, Hanoi, 1 female 20-30.IV.1991, at light, leg. E. JENDEK 1991 (NhMW); Tonkin, Hanoi, 2 males 1 female Jan. 1917, R.V. DE SALVAZA, Brit. Mus. 1922-112 (BMNH, JAL).

DISTRIBUTION. - A well-known East Palearctic species, southwards reaching South China (Beijing, Fujian, Gansu, Guangdong, Guizhou, Henan, Shangdong, Shanghai, Sichuan, Taiwan, Zhejiang), and the northern territories of Vietnam and Burma.

BIOLOGY. - The species was reported as collected from *Fatsia* (Araliaceae), *Cinnamomum* (Lauraceae), *Ilex* (Aquifoliaceae), from roots of *Hibiscus* (Malvaceae), on ground, under leaves or in soil (SCHAEFER, 1988). It was also observed to be predacious (on *Chironomidae*) and cannibalistic when starved (SCHAEFER, 1988).

REMARKS. - I have found (in NhMW) one specimen of *M. japonensis* labelled "Indien", but I regard it as a case of mislabelling.

### ***Macroscytus noonadanae* FROESCHNER**

(figs. 373-375)

*Macroscytus noonadanae* FROESCHNER, 1967: 19.

DIAGNOSIS. - This species differs from all of the *aequalis*-group (except *tenasserimus*) in having the deepest and strongest postmedian transverse impression on the pronotum which is continued laterally towards posterolateral angles. The species differs clearly from *M. tenasserimus* in the smooth sternites (lateral two thirds of sternites are densely wrinkled and punctured in *M. tenasserimus*).

DESCRIPTION. - Head chocolate brown, smooth and polished, dorsally impunctate except for three primary setigerous punctures; clypeus as long as paraclypei; eyes blackish brown, ocular index 1.89-1.98; ocelli reddish brown, large, interocellar index 8.4; antennae pale brown; rostrum brown, reaching posterior margin of middle coxae.

Pronotum chocolate brown, puncturation of a disc as in fig. 375; postmedian transverse impression deep, bearing a row of strong punctures both interrupted medially, impression continues laterally backwards to umbones; anterior lobe submarginally with three setigerous punctures, posterior lobe with the single setigerous puncture.

Scutellum of the same colour as pronotum, polished, disc with numerous coarse irregularly spaced punctures; basal part and apex impunctate.

Corium a little paler than pronotum and scutellum; clavus with one complete row of punctures and few punctures basally; mesocorium with two impressed rows of punctures paralleling clavo-corial suture, mesocorial disc with scattered almost colourless small punctures; exocorium with very few punctures finer than those on mesocorium; costa with 2 setigerous punctures; membrane hyaline, slightly surpassing apex of abdomen.

Propleuron anteriorly with small punctures, depression strong with crowded coarse punctures which become finer and sparser posteriorly, hind margin impunctate; evaporative areas with distinct wrinkles.

Sternites shining, almost smooth, lateral parts weakly wrinkled; each segment with triangular patch of dense fine punctures posterior to spiracle.

Legs unicolorous, anterior and middle pair not specifically modified; posterior femora with short tooth subapically on each margin, posterior tibiae ventrally with a weak basal emargination and small tubercle.

Paramere as in fig. 373; penis as in fig. 374.

Measurements (male and female respectively): body length 7.95, 7.65-8.40; body width 3.92, 3.77-4.01; head length 1.20, 1.19-1.22; head width 1.89, 1.78-1.90; pronotum length 1.95, 1.86-2.08; pronotum width 3.71, 3.54-3.90; scutellum length 3.06, 3.01-3.15; scutellum width 2.47, 2.36-2.52; antennal segments: 0.39 : 0.45 : 0.65 : 0.79 : 0.97, 0.36-0.40 : 0.44-0.46 : 0.62-0.67 : 0.78-0.79 : 0.87-1.02.

#### TYPE MATERIAL EXAMINED

Holotype male of *Macroscytus noonadanae* FROESCHNER: [PHILIPPINES]: Philippines, Balabac, Dalawan Bay, 8.Oct.1961, Noona Dan Exp. 61-62; Caught by Mercury-light; Holotype, *Macroscytus noonadanae* [!] FROESCHNER 65 (ZMC).

Paratype female: [PHILIPPINES]: Philippines, Balabac, Dalawan Bay, 8.Oct.1961, Noona Dan Exp. 61-62; Caught by Mercury-light 19.00-23.30; Allotype, *Macroscytus noonadanae* [!] FROESCHNER 65 (ZMC).

DISTRIBUTION. - Philippines.

### ***Macroscytus pfeifferi* SIGNORET**

(figs. 376-378)

*Macroscytus Pfeifferi* SIGNORET, 1883a: 468; LETHIERRY & SEVERIN, 1893: 71.

Misidentification: FROESCHNER, 1967: 21.

DIAGNOSIS. - Among those species with the single preocular submarginal setigerous puncture on each paraclypeus, the costa with 1-2 setigerous punctures, the sternites with punctures only close to the spiracles, and the uniformly coloured pronotum bearing 4-6 submarginal setigerous punctures on each lateral margin, this one can be separated from all, except *M. borneensis*, by the sternites V-VII with patches of punctures anterior and posterior to the spiracles (the patches of punctures on sternites V-VII is present only posterior to the spiracles in the remaining species). *M. pfeifferi* can be distinguished from *M. borneensis* by the shape of the 2nd conjunctival appendages of penis, the sparsely punctured scutellum (densely punctured in *borneensis*), and the other characters as given in the key.

DESCRIPTION. - Body dark coloured: head, pronotum and scutellum almost black, corium brownish black, ventral surface almost black.

Head polished, dorsally impunctate except for three primary setigerous punctures; clypeus as long as paraclypei; eyes blackish brown or brown, ocular index 1.66-1.90 (in male) or 1.88-2.08 (in female); ocelli large, yellowish or reddish

brown, interocellar index 5.5-8.7, ocellar index 2.9-4.3; antennae pale brown or brown, 3rd segment 1.5-1.9 times longer than the 2nd; rostrum pale brown or brown, reaching middle coxae.

Pronotum with umbones more brownish than the disc; postmedian transverse impression present, but not as deep as in *M. noonadanae*; each lateral margin with a row of 4-6 submarginal setigerous punctures.

Scutellum sparsely punctured, basal part and apex impunctate (fig. 376).

Corium somewhat more brownish than pronotum and scutellum, distinctly punctured with punctures smaller than those on pronotum and scutellum; clavus with one complete and one partial row of punctures; mesocorium almost evenly punctured, two rows of punctures parallel clavo-corial suture; costa with 1-2 setigerous punctures; membrane hyaline with brown patches, surpassing the tip of abdomen.

Propleuron punctured, anterior convexity dulled by numerous tiny punctures, depression and posterior convexity with larger punctures; apex of peritreme as in fig. 377.

Sternites alutaceous, slightly wrinkled; sternites V-VII with patches of tiny punctures posterior and anterior to spiracle, sternite III and sometimes also sternites IV with very few punctures anteriorly.

Male posterior femora with large subapical tooth on dorsal margin, and numerous small teeth on the ventral, posterior tibiae with several subbasal small tubercles; female posterior femora with small conspicuous subapical tooth on dorsal margin, posterior tibiae without tubercles.

Penis and the 2nd conjunctival appendage as in fig. 378.

Measurements (male and female respectively): body length 11.86-12.16, 10.67-12.17; body width 6.08-6.32, 6.02-6.27; head length 1.30-1.42, 1.51-1.72; head width 2.50-2.62, 2.43-2.65; pronotum length 3.19-3.38, 2.90-3.25; pronotum width 5.44-5.78, 5.45-5.88; scutellum length 4.66-5.00, 4.50-5.10; scutellum width 3.63-3.87, 3.60-3.92; antennal segments: 0.43-0.55 : 0.61-0.70 : 1.04-1.13 : 1.20-1.25 : 1.26-1.35, 0.42-0.48 : 0.56-0.61 : 0.85-1.03 : 1.09-1.25 : 1.15-1.34.

#### TYPE MATERIAL EXAMINED

Lectotype female of *Macroscytus pfeifferi* SIGNORET (present designation): [INDONESIA]: Pfeiffer 853, Borneo; *Pfeifferii* det. SIGNOR.; Type *Pfeifferi* SIGN. labelled by R.C. FROESCHNER 59; Coll. Nat. Mus. Wien (NhMW).

#### OTHER MATERIAL EXAMINED (4 males, 7 females)

VIETNAM: Tonkin, Montes Mauson, 1 female April-Mai, 2-3000', H. FRUHSTORFER, det. as *pfeifferi* (NhMW).

MALAYSIA: Sarawak, Semongok, 1 male 6-XII-1966, light trap, Coll. G.H.L. ROTHSCHILD (JAL).

INDONESIA: N. Sumatra, Bivonac One, Mt Bandahara, 3.43°N-97.41°E, 3 males 6 females 25.VI-5.VII.1972, J. KRIKKEN, no 23, ca 810m, Museum Leiden, lowland multistr evergreen forest, Malaise-trap (RNH, JAL).

DISTRIBUTION. - Vietnam, Borneo, Sumatra.

BIOLOGICAL DATA. - Nine specimens have been collected from a Malaise-trap in a lowland evergreen forest of Sumatra.

### *Macroscytus popovi* Lis

(figs. 379-381)

*Macroscytus popovi* Lis, 1991c: 213.

DIAGNOSIS. - Among those species of the genus with the single preocular



submarginal setigerous puncture on each paraclypeus and the shallow postmedian transverse impression on pronotum, this one can be distinguished by the set of following characters: the body small, 6.81-9.12 mm in length; the ocellar index from 4.3 to 5.5; the interocellar index from 8.0 to 12.0; the costa with 2-4 setigerous punctures; the pronotum with 5-8 submarginal setigerous punctures on each lateral margin; the sternites smooth, with almost indistinct tiny punctures close to the spiracles; the shape of the 2nd conjunctival appendage as in fig. 381.

DESCRIPTION. - Body (fig. 379) from castaneous to blackish brown, corium and umbones of pronotum usually slightly paler than scutellum.

Head dorsally impunctate except for the three primary setigerous punctures; clypeus equal in length to paraclypei; eyes blackish brown or dark brown, ocular index 2.00-2.40; ocelli reddish brown or brown, interocellar index 8.0-12.0, ocellar index 4.3-5.5; antennae pale brown or brown, 3rd segment longer than 2nd; rostrum brown, surpassing middle of mesosternum, sometimes reaching middle coxae.

Pronotal postmedian transverse impression shallow, with a row of punctures interrupted medially (fig. 379); each lateral margin with 5-8 submarginal setigerous punctures; puncturation of anterior and posterior lobe as in fig. 379.

Scutellum with numerous punctures irregularly scattered over most of surface, except for apex and anterolateral angles.

Corium a little paler than pronotum and scutellum, with distinct punctures smaller than those on pronotum and scutellum; clavus with one complete and one or two partial row of punctures; mesocorium with two rows of punctures paralleling clavo-corial suture, mesocorial disc almost evenly punctured; costa with 2-4 setigerous punctures; membrane hyaline, browned, surpassing the apex of abdomen.

Propleural depression and basal part of posterior convexity with numerous punctures, anterior convexity alutaceous; evaporatoria and apex of peritreme typical of the genus.

Sternites smooth or weakly wrinkled laterally, with tiny punctures along sutures; sternites III and IV with a few tiny punctures anterior and posterior to spiracle, sternites V-VII with tiny punctures only posterior to spiracle; all punctures very small, sometimes sternites may look like impunctate.

Anterior and middle pair of legs not specifically modified; male posterior femora with distinct subapical tooth on dorsal margin, and several smaller teeth on the ventral, posterior tibiae with small subbasal tubercles; female posterior femora with small subapical tooth on dorsal margin, ventral margin with setae only, posterior tibiae without tubercles.

Paramere as in fig. 380, penis and the 2nd conjunctival appendages as in fig. 381.

Measurements (male and female respectively): body length 6.81-9.12, 7.25-8.25; body width 3.87-4.85, 3.90-4.55; head length 1.09-1.41, 1.24-1.34; head width 1.58-2.11, 1.86-2.01; pronotum length 1.91-2.60, 2.12-2.49; pronotum width 3.43-4.51, 3.61-4.20; scutellum length 2.60-3.50, 2.90-3.45; scutellum width 2.16-2.94, 2.37-2.80; antennal segments 0.31-0.42 : 0.40-0.49 : 0.49-0.65 : 0.74-0.80 : 0.81-0.92, 0.35-0.39 : 0.42-0.47 : 0.50-0.56 : 0.63-0.70 : 0.68-0.78.

#### TYPE MATERIAL EXAMINED

Holotype male of *Macroscytus popovi* Lis: [VIETNAM]: Vietnam, prov. Kien Giang, isl. Tho Tu, 9 IV 1987, A. PONOMARENKO leg., *Macroscytus popovi* Lis, det. J.A. Lis, Holotype (JAL).

Paratype female: [VIETNAM]: Lao-Kay, Tonkin, *Macroscytus popovi* Lis, det. J.A. Lis, Paratype (MNHN).



OTHER MATERIAL EXAMINED (9 males, 7 females)

VIETNAM: Tonkin, Ha-Giang, 1 female, Cap. Bonifacy 1913, Muséum Paris (MNHN); Prov. Ha-Tinh, forestiere HÜONG-sôn, 150m, forêt trop. fluv., 2 females 2 males 14.VIII.1963, a la lumière, T. Pocs (HNHM, JAL); Moc Chau, 1 female 1 male 25.X.1986, 800m, on light, No. 100, 1 male 26.X.1986, 850m, on light, No. 105, leg. T. VASARHELYI (HNHM, JAL); Vietnam, Ha Son-Binh, 10km SW Hoa-Binh, 1 male 17.X.1976, L. MEDVEDEV leg. (JAL); Poulocondore, Cochinchina, 1 female Aug. 1924, E. le MOULT, Museum Leiden, det. as *Macroscytus subaeneus* DALL. (RNH); Nha-Trang, S. Annam, 1 male 2 females, DAVIDOV 930-34 (ZIP, JAL).

LAOS: Mg. Xoi, Prov. Laos, Indo-China, 1 male, E. le MOULT, Museum Leiden, det. as *Macroscytus subaeneus* DALL. (RNH).

SOUTH CHINA: China, Prov. Fo-kien, 1 male 1.X.1912, Kons. G. SIEMSEN (ZIZM).

DISTRIBUTION. - South China (Fujian), Vietnam, Laos.

BIOLOGICAL DATA. - Several examined specimens have been collected at light in a tropical forest.

### ***Macroscytus subaeneus* (DALLAS)**

(figs. 382-385)

*Aethus subaeneus* DALLAS, 1851: 116; DOHRN, 1859: 9; WALKER, 1867: 160; STÅL, 1876: 26.

*Cydus subaeneus*: LETHIERRY & SEVERIN, 1893: 68.

*Macroscytus subaeneus*: DISTANT, 1899a: 222 [part]; STICHEL, 1962: 775 [part].

Misidentifications: DISTANT, 1901a: 101, 1902: 96 [excl. descr.]; MAXWELL-LEFROY, 1909: 306; KIRKALDY, 1910a: 112; PAIVA, 1918: 3, 1919: 351; HORVÁTH, 1919: 241; ESAKI & ISHIHARA, 1951: 29; TAKARA & HIDAKA, 1960: 182; STICHEL, 1962: 775 [part]; TAKENOUCI & MURAMOTO, 1968: 14, 1969: 4; HSIAO et al., 1977: 46; AHMAD & MOIZUDDIN, 1977: 76; JOSIFOV & KERZHNER, 1978: 187, 188, fig. 76; AHMAD et al., 1979: 18; TOMOKUNI, 1979: 104, 1981: 104, 1985: 154; MOIZUDDIN & AHMAD, 1985: 163, 1990: 326; LIN & ZHANG, 1992: 218.

DIAGNOSIS. - The species belongs to the group of species with the postmedian transverse pronotal impression absent, and the sternites with punctures only close to the spiracles. Morphologically it is very similar to *M. japonensis*, but differs from the latter in the impunctate or only slightly punctured scutellum (scutellum is densely punctured in *M. japonensis*). The two species differ also distinctly in the shape of the male genitalia (figs. 384 & 385), and in the shape of male posterior femora (fig. 383). Besides, *M. subaeneus* is distributed in south-eastern parts of the Oriental Region, while *M. japonensis* is the East Palaearctic species penetrating into northern parts of the Oriental Region.

DESCRIPTION. - Head dark castaneous or almost black, smooth, impunctate except for three primary setigerous punctures; clypeus as long as paraclypei; eyes black or brownish black, ocular index 2.44 in male, and 2.30-2.57 in female; ocelli brownish black, interocellar index 7.1 (in male) or 6.9-9.0 (in female); antennae brown or reddish brown, 2nd segment shorter than the 3rd; rostrum reddish brown or brown, reaching middle coxae.

Pronotum dark castaneous or almost black, postmedian transverse impression absent; disc undivided into lobes, punctured as in fig. 382; each lateral margin with a row of 3-4 (in male) or 5-6 (in female) submarginal setigerous punctures.

Scutellum of the same colour as pronotum, almost impunctate in male, or with distinctly separated punctures in female (fig. 382).

Corium slightly paler than both pronotum and scutellum; clavus with one complete and two partial rows of punctures; exocorium and mesocorium almost evenly punctured, the latter additionally with two rows of punctures paralleling clavo-corial suture; costa with two setigerous punctures; membrane hyaline,

slightly browned, distinctly surpassing the tip of abdomen.

Propleural depression with numerous coarse punctures; evaporatoria typical of the genus.

Sternites brownish black or dark reddish brown, polished and smooth, sometimes posterior parts slightly wrinkled; lateral margins weakly finely punctured, area posterior to spiracle with a triangular patch of dense tiny punctures, that anterior to spiracle with several punctures.

Legs dark reddish brown or brownish black; posterior femur of male with one large and two small teeth basally and one spine distally (fig. 383).

Paramere as in fig. 384; penis and the 2nd conjunctival appendages as in fig. 385.

Measurements (male and female respectively): body length 8.60, 8.45-9.24; body width 4.70, 4.75-5.05; head length 1.43, 1.15-1.40; head width 2.10, 1.91-2.12; pronotum length 2.56, 2.44-2.52; pronotum width 4.27, 4.12-4.31; scutellum length 3.17, 3.15-3.27; scutellum width 2.76, 2.74-2.76; antennal segments: 0.46 : 0.57 : 0.65 : 0.77 : 0.92, 0.37-0.41 : 0.42-0.56 : 0.51-0.70 : 0.66-0.85 : 0.80-1.01.

#### TYPE MATERIAL EXAMINED

Lectotype male of *Aethus subaeneus* DALLAS (present designation): [PHILIPPINES]: Phil. Isl., 4222; Type; 75. *Aethus subaeneus* DALLAS (type); Brit. Mus. Type No. Hem. 326; Lectotype det. J.A. Lis 1990 (BMNH).

#### OTHER MATERIAL EXAMINED (2 females)

THAILAND: Siam, 1 female, A. PAVIE 1886, Muséum Paris (MNHN).

INDONESIA: Flores, Larantoea, 1 female Don.'89, v.v. SANDS, Museum Natura Artis Magistra (ZMA).

DISTRIBUTION. - Thailand, Philippines, Indonesia (Flores).

REMARK. - A very rare species; almost all its previous records pertain to several different species.

### ***Macroscythus sumatranus*, new species**

(figs. 386-387)

*Macroscythus transversus*, not of BURMEISTER: SIGNORET, 1883a: 476 [part]; BREDDIN, 1905: 114.

*Macroscythus subaeneus*, not of DALLAS: DISTANT, 1901a: 101 [part].

DIAGNOSIS. - This new species belongs to the group of species with the single preocular submarginal setigerous puncture on each paraclypeus, the costa bearing 2 setigerous punctures, the uniformly coloured pronotum bearing 4-5 submarginal setigerous punctures on each lateral margin, and the sternites with the patches of punctures only posterior to the spiracles. The species is morphologically closely related to *M. dalawanus*, but is somewhat smaller than the latter (8.43-10.78 mm in *M. sumatranus*, 9.36-11.57 mm in *M. dalawanus*). Nevertheless, the best character for separating the two species is the shape of the 2nd conjunctival appendages (figs. 365 & 387).

DESCRIPTION. - Body from dark castaneous to almost black, corium and apical part of umbones usually more brownish than scutellum.

Head smooth and polished, sometimes only slightly wrinkled laterally, impunctate except for three primary setigerous punctures; clypeus as long as paraclypei; eyes blackish brown, grayish brown or brown, ocular index 1.85-2.45; ocelli reddish brown or yellowish brown, interocellar index 6.0-11.0, ocellar index

3.8-4.9; antennae brown, paler than head, 3rd segment 1.24-1.44 times longer than the 2nd; rostrum brown, reaching middle coxae.

Pronotum divided into two lobes by distinct postmedian transverse impression bearing numerous punctures; each lateral margin with a row of 4-5 submarginal setigerous punctures.

Scutellum almost evenly punctured, basal part and apex impunctate; punctures slightly larger than those on pronotum.

Corium somewhat paler than pronotum and scutellum, almost evenly punctured with punctures smaller than those on scutellum; clavus with one complete and two partial rows of punctures; exocorium weakly punctured; costa with 2 setigerous punctures; membrane hyaline, sometimes with brown patches distally, surpassing the posterior extremity of abdomen.

Propleuron with numerous punctures in depression and in basal part of posterior lobe; evaporatoria typical of the genus.

Sternites smooth with more or less delicate wrinkles, each laterally with a triangular patch of dense tiny punctures posterior to spiracles, sternites III and IV with very few tiny punctures also anterior to spiracle; sometimes a few punctures occur also on lateral third of sternites.

Legs castaneous, male posterior tibiae with small subbasal tubercles, posterior femora with distinct subapical teeth (fig. 386); female posterior femora with very small, sometimes indistinct subapical tooth.

Penis and the 2nd conjunctival appendage as in fig. 387.

Measurements (male and female respectively): body length 8.43-10.78, 8.50-10.49; body width 4.22-5.49, 4.65-5.10; head length 1.42-1.57, 1.19-1.47; head width 2.01-2.45, 2.17-2.35; pronotum length 2.21-2.84, 2.19-2.70; pronotum width 4.02-5.10, 4.41-4.85; scutellum length 3.23-4.17, 3.36-4.02; scutellum width 2.60-3.33, 2.68-3.09; antennal segments: 0.42-0.43 : 0.54-0.60 : 0.67-0.85 : 0.90-1.01 : 1.01-1.12, 0.41-0.43 : 0.47-0.55 : 0.63-0.71 : 0.82-0.96 : 0.94-1.04.

#### TYPE MATERIAL EXAMINED

Holotype male: [INDONESIA]: Banjoewangi, Java, 1911, MAC GILLAVRY; coll. Dr. D. MAC GILLAVRY (ZMA).

Paratypes: 2 males: [INDONESIA]: Buitenzorg, Java, K. KRAEPELIN, leg. 24.II.-12.III.1904, ded. 8.VI.1904, *Macroscytus transversus* BURM., G. BREDDIN determ. (ZIZM); 1 female: [INDONESIA]: Java, Coll. Signoret, *transversus* det. SIGNORET, *Macroscytus pfeifferi* SIGN. det. R.C. FROESCHNER 59 (NhMW); 1 female: [INDONESIA]: Sumatra, Tandigeng bij, Moeara Enim, 1924, E. DOUGLAS; coll. Dr. D. MAC GILLAVRY (ZMA); 1 female: [INDONESIA]: Bindjei-Medan, Sumatra, Dr. C.R. PFISTER, coll. Dr. D. MAC GILLAVRY (JAL); 1 male: [INDONESIA]: Bengkalis, Maindron 1885, Muséum Paris (MNHN); 1 female: [INDONESIA]: Timor, 1920, DOUGLAS, coll. Dr. D. MAC GILLAVRY (ZMA); 3 females: [INDONESIA]: Tandjong Morawa, Serdang, N.O. Sumatra, Dr. B. HAGEN, det. as *Macroscytus javanus* MAYR, Museum Leiden (RNH, JAL); 1 male 1 female: [INDONESIA]: Gedangan Vak, 20M. hoog, Lichtvangkoi, 3/4-12-20 (male), 16/17-12-27 (female) (RNH); 1 male: [INDONESIA]: Palembang, Jan. 1947, W.C. VERBOOM, Museum Leiden (RNH); 2 females 1 male: [MALAYSIA]: Malaysia, Pahang, Taman Negara, 1-13.III.1984, at light, L. JESSOP, B.M. 1984-230 (BMNH, JAL); 1 male: [MALAYSIA]: Malaya, Kuala Lumpur, at light, Nov. 20th 1938, H.M. PENDELURY, F.M.S. Museum, Ex F.M.S. Museum, B.M. 1955-354 (BMNH); 4 females: [MALAYSIA]: Malay Penin., Ex Coll. Agr. Dept., Kuala Lumpur, Sept. 30th 1918 (2 females), March 1918 (1 female), [without date] (1 female), Ex F.M.S. Museum, B.M. 1955-354 (BMNH, JAL); 2 males 1 female: [MALAYSIA]: Malaya, Kuala Lumpur, at light, Feb. 27th 1923 (1 male), March 26th 1925 (1 male), Dec. 24th 1923 (1 female), Ex F.M.S. Museum, B.M. 1955-354 (BMNH, JAL); 1 male: [MALAYSIA]: Malay Penin., West Coast, Langkawi Is., April 19th 1928, H.M. PENDELURY, Coll. F.M.S. Museum, Ex Coll. F.M.S. Museum, B.M. 1955-354 (BMNH); 2 females: [MALAYSIA]: Borneo, E. Malaysia, Sepilok, Sabah, 5-11.VIII.1983, N. OHBAYASHI leg. (NSMT); 1 female: [MALAYSIA]: N. Borneo, Sabah, 10km SE Ranau, Kg. nalapak, Sg. Kananapun, ML-light, 116.47°E 5.58°N, 350m, 7 Feb 1987/a, J. HUISMAN, Museum Leiden (RNH); 1 female: [MALAYSIA]: Malaysia Sabah: Long Pa Sia, Airstrip along S Pa Sia, 4.25°N 115.43°E, 1090m, 14 Oct 1986, J. HUISMAN et al., Museum Leiden (RNH); 1 female: [MALAYSIA]: Borneo, Sarawak, trail Pa Lungan - Long Rapun, 115.35°E 3.53°N, 1200m, 23 Feb 1987/A, J. HUISMAN, Museum Leiden (RNH); 1 male: [VIETNAM]: Tonkin Centr., Region de Chim-Hoa et de Tuyen-Quan, A. WEISS 1901, Muséum Paris (JAL); 1 male: [VIETNAM]: Tonkin, Env. d'Hanoi (Demange), V. LABOISSIERE 1924, Muséum Paris (MNHN); 1 female: [VIETNAM]: Tonkin, reg. de Hoa-Binh, A. de COOMAN 1928, Muséum Paris (MNHN); 1 male: [VIETNAM]: Tonkin, reg. de Hoa-Binh, A.

de COOMAN 1929, Muséum Paris (MNHN); 3 females: [VIETNAM]: Tonkin, Hoa-Binh, J. De COOMAN, R. OBERTHUR 1919, Muséum Paris (MNHN, JAL); 1 female 1 male: [VIETNAM]: Saigon, 4621, Collection E. de BERGEVIN, *Macroscytus niponensis*? VOLLENHOV., Saigon (MNHN); 1 male 1 female: [VIETNAM]: N-Vietnam, Cuc Phuong N.P., 2-12.V., 100km S Hanoi, leg. E. JENDEK 1991 (NhMW); 3 females: [VIETNAM]: Annam, Phuc-Son, Nov. Dez., H. FRUHSTORFER, H. FRUHSTORFER vend. 10.XII.1901 (ZIZM); 1 male: [LAOS]: Laos, Luang-Prabang, COUNILLON 169.96, Muséum Paris (MNHN); 1 male: [LAOS]: Laos, Vientian, at light, 26.I.1986, KABAKOV (ZIP); 1 male: [LAOS]: Laos, Luang Prabang, II 1918, R.V. DE SALVAZA, Brit. Mus. 1922-112 (BMNH); 3 females: [LAOS]: Xieng Khouang, Ta Trang, 18.XI.1917, R.V. DE SALVAZA (BMNH, JAL); 2 males: [CHINA]: China, Nauning, Kwangsi, E. le MOULT, Museum Leiden, det. as *Macroscytus subaeneus* DALL. (RNH); 1 male: [BURMA]: Kathá, Birmania, FEA VI 1885, Museo Civico di Genova, *Macroscytus subaeneus* DALL., DISTANT det. (MCSN); 1 female: [BURMA]: Kathá, Birmania, FEA VI 1885, 101, Birma, Leonardo FEA leg., vend. 1.I.1895 (ZIZM); 1 female: [BURMA]: Tenasserim, Thagatá, FEA Apr.1887, *Macroscytus subaeneus* DALL., DISTANT det., Museo Civico di Genova (MCSN); 1 male: [BURMA]: Birmanie, Rangoun, J. CLAINE 1902, Muséum Paris (MNHN); 1 female: [THAILAND]: Thailand, J.D.H. HEDLEY, B.M. 1954-363 (BMNH); 1 female: [THAILAND]: Siam, SAUNDERS 65.13 (JAL); 1 female: [THAILAND]: Siam, Nan, 30.XII.1927, Prof. J.D.A. COCKERELL, Pres by Imp. Bur. Ent., Brit. Mus. 1929-407 (BMNH); 1 female: [SINGAPORE]: Singapore, H.N. RIDLEY, 1901-34 (BMNH); 1 female: [INDIA]: Calcutta, L. TIETY leg., ded. 24.VI.1908 (ZIZM); 1 female: [INDIA]: Gopaldhara, Bw., Darjeeling, 4.720ft, 1-V-17, H. STEVENS, *Macroscytus subaeneus* DALL. (BMNH); 1 male: [INDIA]: Tenmalai, 500-800', Travancore, S. India, 11-17-X-38, B.M.-C.M. Expdn. to S. India, Sept.-Oct. 1938, *Macroscytus nigroaeneus*, Brit. Mus. 1939-205 (BMNH); 2 males: [INDIA]: India, Barodabri, 9-11.V.1961, S. KOROVIN (ZIP, JAL); 1 male: [INDIA]: India, Kalimpong, V, 1961, S. KOROVIN (ZIP).

**DISTRIBUTION.** - India, Burma, South China (Guangxi), Laos, Vietnam, Thailand, Singapore, Malaya, Sumatra, Java, Borneo, Timor.

**REMARKS.** - Three specimens from Java previously determined as *Macroscytus transversus*, namely one female (SIGNORET, 1883a) and two males (BREDDIN, 1905), as well as one male from Burma determined by DISTANT (1901a) as *Macroscytus subaeneus* also belong to the new species; therefore they are included in the type material of *M. sumatranus*, too.

### ***Macroscytus tenasserimus* Lis**

(figs. 388-390)

*Macroscytus subaeneus*, not of DALLAS: DISTANT, 1901a: 101 [part].

*Macroscytus tenasserimus* Lis, 1991c: 211.

**DIAGNOSIS.** - The deep and coarsely punctured postmedian transverse impression on the pronotum combined with the presence of numerous distinct wrinkles and small punctures on the lateral two thirds of the sternites will permit ready recognition of this species among those bearing the single preocular submarginal setigerous puncture on each paraclypeus and two setigerous punctures on the costa.

**DESCRIPTION.** - Body (fig. 388) from pale brown, through castaneous to blackish brown.

Head dorsally impunctate except for the three primary setigerous punctures; clypeus as long as or slightly longer than paraclypei; eyes pale brown, reddish brown or blackish brown, ocular index 1.98-2.69; ocelli pale brown, brown or reddish brown, interocellar index 6.3-8.0; antennae pale brown, 3rd segment longer than the 2nd; rostrum pale brown or brown, surpassing middle coxae.

Pronotum with a postmedian transverse impression abruptly marked (fig. 388), bearing a row of punctures; each lateral margin of pronotum with 4 submarginal setigerous punctures (3 on anterior lobe, 1 at subbasal angle); anterior lobe subapically and laterally densely punctured; posterior lobe distinctly punctured with

exception of umbones and posterior margin.

Scutellum densely punctured, except for anterolateral angles and apex; punctures of the same size as those on pronotum.

Corium usually slightly paler than pronotum and scutellum; punctures a little smaller than those on pronotum; clavus with one complete and two partial rows of punctures; mesocorium almost evenly punctured; exocorium very densely punctured; costa with 2 setigerous punctures; membrane hyaline, sometimes fuscous, surpassing the tip of abdomen.

Propleuron distinctly punctured; depression and posterior convexity with large coarse punctures, anterior convexity with smaller punctures; evaporatoria and apex of peritreme typical of the genus.

Sternites blackish brown, glossy in the middle, densely wrinkled laterally, and with almost indistinct small punctures among wrinkles.

Anterior and middle pair of legs not specifically modified; posterior femora with small distinct spine in both sexes.

Paramere as in fig. 389; penis as in fig. 390.

Measurements (male and female respectively): body length 9.52-10.88, 9.14-10.98; body width 4.90-5.54, 4.85-5.75; head length 1.23-1.52, 1.67-1.80; head width 2.22-2.45, 2.35-2.52; pronotum length 2.27-2.92, 2.51-2.95; pronotum width 4.70-5.05, 4.65-5.45; scutellum length 3.66-4.26, 3.95-4.65; scutellum width 2.85-3.33, 3.05-3.65; antennal segments 0.42-0.47 : 0.56-0.68 : 0.73-0.80 : 1.03-1.11 : 1.09-1.12, 0.45-0.52 : 0.57-0.65 : 0.76-0.80 : 1.02-1.05 : 1.08-1.12.

#### TYPE MATERIAL EXAMINED

Holotype male of *Macroscytus tenasserimus* LIS: [BURMA]: Birmania, Tenasserim, Kawkaeet, Fea, Gen. Febr. 1887, coll. R.I.Sc.N.B., *Macroscytus javanus* MAYR; *Macroscytus tenasserimus* LIS, det. J.A. LIS; Holotype (IRSNB).

#### OTHER MATERIAL EXAMINED (4 males, 6 females)

INDIA: Indes Or., 1 male, det. as *Macroscytus nitens* FIEB., type (MNHN); India, Assam, Kazirachi res., 2 males 9-11.V.961, S.E. KOROVIN (ZIP, JAL); India, Kalimpong, 1 female V.1961, S.E. KOROVIN (ZIP).

BURMA: Kathá, Birmania, 1 female VI 1885, Fea, 203, Museo Civico di Genova, det. as *Macroscytus subaeneus* by DISTANT (MCSN); Schwego-Myo, 1 female (JAL); Tenasserim, Kawkaeet, Gen. Febr. 1887, FEA: 1 female, det. as *Macroscytus subaeneus* by DISTANT, Museo Civico di Genova (MCSN), 1 female, Birma, Leonardo FEA leg., vend. 1.I.1895 (ZIZM), 1 female, 181, det. as *Macroscytus subaeneus* DALL. by OSHANIN (ZIP); Palon, Pegu, L. FEA, 1 male VIII.IX.87, det. as *Macroscytus subaeneus* DALL. by OSHANIN (ZIP).

DISTRIBUTION. - Burma, India.

REMARK. - One examined specimen bears the label: "*M. nitens* FIEBER, type"; to my knowledge such a species has never been described.

### ***Macroscytus transversus* (BURMEISTER)**

(figs. 391-392)

*Cydnus transversus* BURMEISTER, 1834: 291.

*Macroscytus transversus* (BURMEISTER): STAL, 1870: 614, 1876: 19; SIGNORET, 1881a: 642, 1883a: 476 [part]; LEHTIERRY & SEVERIN, 1893: 71; DISTANT, 1899a: 222, 1902: 96 [part]; BREDDIN, 1905: 114; WU, 1935: 270 [part]; BOX, 1953: 36; FROESCHNER, 1967: 21; LIS, 1991b: 187, 1991e: 309 & 311.

*Acatalectus transversus* WALKER, 1867: 164, syn. with *M. transversus* by DISTANT, 1899a: 222.

*Adrisa transversa* (WALKER): LEHTIERRY & SEVERIN, 1893: 63; BREDDIN, 1906: 10.

Misidentifications: DALLAS, 1851: 116; DOHRN, 1859: 9; WALKER, 1867: 158; SIGNORET, 1883a: 476 [part]; DISTANT, 1902: 96 [part]; KIRKALDY, 1908: 9; WU, 1935: 270 [part].



**DIAGNOSIS.** - Among the species with the single preocular submarginal setigerous puncture on each paraclypeus and the costa bearing 2 setigerous punctures, this one may be recognized by having the umbones and the posterior margin of the pronotum intensely ochraceous or yellowish brown.

**DESCRIPTION.** - Head blackish brown, anterolateral parts brown, dorsal surface impunctate except for three primary setigerous punctures and some wrinkles laterally; clypeus as long as paraclypei; eyes brown or dark brown, ocular index 2.15-2.90; ocelli yellowish brown or reddish brown, interocellar index 4.2-6.2, ocellar index 5.2-7.4; antennae brown or dark brown, 2nd segment slightly shorter than the 3rd; rostrum ochraceous or brown, surpassing middle of mesosternum, sometimes reaching middle coxae.

Pronotum blackish brown, postmedian transverse impression absent; posterior margin and umbones intensely ochraceous or yellowish brown; disc punctured; each lateral margin with a row of 5-6 submarginal setigerous punctures.

Scutellum brownish black or dark brown, almost evenly punctured, basal part and apex impunctate.

Corium more or less paler than pronotum and scutellum, sometimes clavus and exocorium yellowish brown or ochraceous; clavus with one complete and one or two partial row of dark punctures; mesocorium brown or dark brown, evenly punctured, and with two rows of dark punctures paralleling clavo-corial suture; exocorium evenly punctured, and with distinct rows of dark punctures; costa with 2 setigerous punctures (only occasionally with 3); membrane hyaline, somewhat browned, slightly surpassing the apex of abdomen.

Propleural depression and basal half of posterior convexity with numerous large punctures, anterior convexity dulled by numerous small punctures and wrinkles; evaporative areas distinctly grooved.

Sternites blackish brown, laterally brown, glossy in the middle, lateral parts wrinkled and punctured around spiracles.

Legs brown or chocolate brown; male posterior femora with distinct subapical tooth on dorsal margin, and more or less distinct subbasal tooth on ventral margin, posterior tibiae without tubercles; female posterior femora with better or worse visible subapical tooth on dorsal margin, posterior tibiae without tubercles.

Paramere as in fig. 391, penis and the 2nd conjunctival appendages as in fig. 392.

Measurements (male and female respectively): body length 7.55-9.32, 7.35-10.88; body width 3.97-5.10, 3.92-5.74; head length 1.27-1.33, 0.98-1.47; head width 1.96-2.21, 1.84-2.45; pronotum length 2.16-2.70, 2.21-3.04; pronotum width 3.77-4.66, 3.72-5.39; scutellum length 2.84-3.92, 2.94-4.32; scutellum width 2.55-3.14, 2.45-3.68; antennal segments: 0.38-0.49 : 0.49-0.60 : 0.50-0.72 : 0.64-0.95 : 0.80-1.04, 0.40-0.49 : 0.42-0.66 : 0.51-0.87 : 0.60-1.03 : 0.81-1.12.

#### TYPE MATERIAL EXAMINED

Lectotype female of *Cydnus transversus* BURMEISTER (designated by LIS, 1991b: 187): [PHILIPPINES]: Manila, ERCHROCHOLTZ; 610; 690; Manila; Type; *Cydnus transversus* mihi; Zool. Mus. Berlin, Lectotype, det. J.A. LIS (MNHU).

Lectotype male of *Acatalectus transversus* WALKER (present designation): [INDONESIA]: Aru; SAUNDERS 65.13; WALLACE; Type; *Acatalectus transversus* WALKER; Brit. Mus. Type No. Hem. 324; Lectotype det. J.A. LIS (BMNH).

Paralectotype female of *Acatalectus transversus* WALKER: [INDONESIA]: Paratype; Celeb., WALLACE; Mah; *Acatalectus transversus* (WALK. Cat.) (BMNH).

#### OTHER MATERIAL EXAMINED (24 males, 20 females)

PHILIPPINES: Surigao, Mindanao, 1 female, coll. Dr. D. MAC GILLAVRY (ZMA); Leyte, Philipp., 2 males,



coll. Dr. D. MAC GILLAVRY (ZMA, JAL); Davao, Mindanao (Phil.), 1 male (JAL); Luzon, Manila, 1 female II.1913, leg. G. BOETTCHER, det. as *Macroscytus transversus* BURM., TAEGER Coll., B.M. 1949-474 (BMNH); Philippine Islands, Negro Isl, 1300ft, Camp Lookout, Dumaguete, 1 male 1 female (March 7, 1961), 1 male (March 6, 1961), T. SCHNEIRLA & A. REYES (AMNH, JAL); Philippines, Trident Mines, 500m, nr Narwa, C. Palawan Is., 2 males 1 female 5.IX.1985, By light trap, M. TOMOKUNI (NSMT, JAL); Philippines, Baracatan, 1500m, Mindanao, 1 female June, 27-29, 1977, M. SATO leg. (NSMT); Philippines - Mindoro, 20km W Calapan, Hidden Parad., 2 males 20-21.11.1992, leg. SCHILHAMMER (NhMW).

INDONESIA: Java, Banjoewangi, 1 male 931, LUCHT (ZIP); Soekaboemi, Java, 1 female X-1926, E. le MOULT, Museum Leiden, det. as *Macroscytus transversus* BURM. (RNH); Sulawesi Utara, Dumoga-Bone Nat. Park, subcamp Hogg's Back (660m), Station: 048, 2 females 4 males X-1985, Project WALLACE, leg. R. BOSMANS and J. VAN STALLE, I.G. n. 26.977, Coll. R.I.Sc.N.B., *Macroscytus transversus* (BURM.), det. J.A. LIS (IRSNB, JAL); N Sulawesi, Dumoga Bone NP, Malibagu RD, 10km N of, alt. m. ca 250, 1 female 02.ix.1985, J. HUIJBREGTS, sec growth, at light, RMNH/HH437 (RNH); Indonesia, Sulawesi Tenggara, S Sanggona, Foot of Gn Watuwila: Mokowu river, nr Mokowu camp, 150m asl, 3.48'S 121.39'E, At light along rivulet, largely shaded area, 89JVT032, leg. J. VAN TOL, 1 male 29-31 Oct. 1989, 1989 RMNH Expedition (RNH); C Sulawesi, PaluRegion, Tawaeli - Tomboli rd. (km 34), alt.m 500, 1 male 20-22.xii.1985, J. KRIKKEN, multistr evergr forest, degraded, 2 fish traps, RMNH/pw69b (RNH); Sulawesi Tengah, Nr. Morowali. Ranu River Area, 7 males 12 females 27.I.-20.IV.1980, Lowland rain forest, At light, M.J.D. BRENDALL, B.M. 1980-280 (BMNH, JAL).

DISTRIBUTION. - Philippines, Java, Sulawesi, Aru, New Guinea, Moluccas, Bismarck Archipelago, Australia.

Reported also from China, Sri Lanka and Japan, but I'm rather sure that all these records are based on misidentifications.

BIOLOGICAL DATA. - Reported as a sugar-cane insect in Philippines (Box, 1953). Numerous examined specimens have been collected at light in a lowland rain forest, the one from fish traps in a degraded evergreen forest.

### ***Macroscytus utaranus* Lis**

(figs. 393-394)

*Macroscytus utaranus* Lis, 1991e: 309.

DIAGNOSIS. - The body length not exceeding 8.0 mm (6.85-7.81), the pronotal disc with a shallow postmedian transverse impression, the costa with 2-3 setigerous punctures, the interocellar index ranging from 5.5 to 8.3, the ocular index from 5.0 to 6.5, the sternites with tiny punctures only posterior to the spiracles, and the 2nd conjunctival appendage as in fig. 394 will permit separation of this species from others with the single preocular setigerous puncture on each paraclypeus.

DESCRIPTION. - Head brown or blackish brown, paraclypei as long as or slightly shorter than clypeus, dorsally impunctate except for a single preocular submarginal setigerous puncture; sides slightly wrinkled; eyes brown or blackish brown, ocular index 2.00-2.40; ocelli yellowish brown or reddish brown, interocellar index 5.5-8.3, ocellar index 5.0-6.5; antennae brown or pale brown, 2nd segment shorter than the 3rd; rostrum brown or pale brown, reaching anterior margin of middle coxae.

Pronotum dark brown or blackish brown; anterior lobe with distinct punctures forming an arcuate, subapical transverse band and irregular patch on each side; postmedian transverse impression only slightly developed (sometimes almost indistinct), with a row of punctures, both interrupted medially; posterior lobe with several scattered punctures; each lateral margin with a row of 5-6 submarginal setigerous punctures.

Scutellum dark brown or blackish brown, its disc with numerous coarse

punctures a little larger than those on corium and pronotum; apex and base impunctate.

Corium brown, dark castaneous or blackish brown, a little paler than scutellum; costa with 2-3 setigerous punctures; membrane brown, surpassing the apex of abdomen.

Propleural depression with coarse punctures; evaporatoria and apex of peritreme typical of the genus.

Sternites dark brown or blackish brown, weakly and irregularly wrinkled; each segment with a triangular patch of dense fine punctures posterior to spiracles.

Legs paler than abdomen; male posterior femora with several small tooth on ventral margin, and one distinct subapical tooth on dorsal margin, posterior tibiae with small tubercle; female posterior femora with small subapical tooth on dorsal margin, posterior tibiae without tubercles.

Paramere as in fig. 393, penis and the 2nd conjunctival appendage as in fig. 394.

Measurements (male and female respectively): body length 6.85-7.81, 6.95-7.55; body width 3.68-4.05, 3.73-3.97; head length 1.13-1.16, 0.99-1.20; head width 1.75-1.83, 1.77-1.84; pronotum length 1.90-2.19, 1.95-2.16; pronotum width 3.46-3.66, 3.51-3.78; scutellum length 2.58-2.80, 2.68-2.94; scutellum width 2.32-2.39, 2.39-2.50; antennal segments: 0.30-0.40 : 0.38-0.46 : 0.50-0.53 : 0.63-0.67 : 0.77, 0.34-0.39 : 0.39-0.47 : 0.49-0.53 : 0.57-0.64 : 0.71-0.78.

#### TYPE MATERIAL EXAMINED

Holotype male of *Macroscytus utaranus* Lis: [INDONESIA]: Sulawesi Utara, Dumoga-Bone Nat. Park, Base camp (200m), 20-X-1985, Station: 039, Project WALLACE, leg. R. BOSMANS & J. VAN STALLE, I.G. n°. 26.977, Coll. R.I.Sc.N.B, *Macroscytus utaranus* Lis, det. J.A. Lis; Holotype (IRSNB).

Paratypes: 1 male and 2 females: [INDONESIA]: Sulawesi Utara, Dumoga-Bone Nat. Park, Picnic Site, 12-X-1985, Station: 029, Project WALLACE, leg. R. BOSMANS & J. VAN STALLE, I.G. n°. 26.977, Coll. R.I.Sc.N.B, *Macroscytus utaranus* Lis, det. J.A. Lis; Paratype (IRSNB, JAL).

#### OTHER MATERIAL EXAMINED (6 males, 3 females)

INDONESIA: Iles Moluques, Amboine, Suyckerbuyk, 1 male, det. as *Macroscytus javanus* MAYR, *indicus* VOLLENH. nec WESTWOOD (IRSNB); Celebes, Minahassa, Tomohon, 1 male VII.1954, A.H.G. ALSTON, B.M. 1954-414 (BMNH); Indonesia, Sulawesi Tengah, NW of Luwuk, Hanga-hanga, 0.56°S 122.47°E, 100m, 1 female 9.X.1989, Sample: Sul. 6, Waterfall, severely disturbed vegetation, At light, J.P. DUFFELS (ZMA); N. Sulawesi: Dumoga Bone NP, Malibagu Rd, 10km N of, alt.m ca 250, 1 male 02.ix.1985, J. HUIJBREGTS, sec growth, at light, RMNH/HH437 (RNH); Indonesia, Luksag, 300m, Peleng Is., 2 male 1 female 24.II.-3.III.1986, S. NAGAI leg. (NSMT, JAL); E. Kalimantan, Balikpapan, 1 male 1 female 8 Jan. 1981, J. AOKI & H. HARADA (NSMT).

DISTRIBUTION. - Indonesia (Borneo, Sulawesi, Ambon, Peleng).

BIOLOGICAL DATA. - One examined specimen was collected at light in a severely disturbed vegetation, the other at light in a secondary growth.

### ***Macroscytus vietnamicus*, new species**

(figs. 395-399)

DIAGNOSIS. - This new species differs from all within the *aequalis*-group in the presence of two submarginal setigerous punctures on each paraclypeus (fig. 396).

DESCRIPTION. - Head black, blackish brown or dark castaneous, each lateral margin more brownish, entire surface slightly alutaceous, with a few wrinkles laterally and several small, almost indistinct scattered punctures; clypeus as long

as paraclypei, parallel-sided; each paraclypeus with 2 submarginal setigerous punctures (fig. 396); eyes blackish brown or brown, ocular index 2.10-2.23; ocelli large, orange or reddish brown, interocellar index 6.6-10.4; antennae brown or pale brown, 2nd segment shorter than the 3rd; rostrum brown or reddish brown, reaching middle coxae.

Pronotum blackish brown or dark castaneous, transverse postmedian impression distinctly developed, sometimes interrupted medially; puncturation of disc as in fig. 395; each lateral margin with 4-5 submarginal setigerous punctures.

Scutellum of the same colour as pronotum, evenly punctured with exception of the apex and anterolateral angles; punctures larger than those on pronotum (fig. 395).

Corium castaneous or dark castaneous, slightly paler than scutellum and pronotum; clavus with one complete and two partial rows of punctures; mesocorium with two rows of punctures paralleling clavo-corial suture, mesocorial disc almost evenly punctured, punctures of the same size as those on scutellum; exocorium densely punctured; costa with 2 setigerous punctures; membrane semihyaline, browned, broader than abdomen and surpassing its tip.

Propleuron blackish brown, depression densely coarsely punctured, posterior convexity sparsely punctured, apical part of anterior convexity with smaller punctures; evaporatoria typical of the genus, lamella on metapleuron coarsely punctured.

Sternites III-VI distinctly punctured in lateral two thirds, glossy in the middle.

Legs blackish brown or dark castaneous; posterior femora of male with several distinct teeth, posterior tibiae with distinct subbasal tubercle (fig. 397).

Paramere as in fig. 398; ductus seminis and the 2nd conjunctival appendages long (fig. 399).

Measurements (male and female respectively): body length 8.86-9.62, 9.24-10.19; body width 4.55-5.42, 4.75-5.65; head length 1.34-1.51, 1.29-1.47; head width 2.18-2.31, 2.24-2.34; pronotum length 2.46-2.83, 2.63-2.90; pronotum width 4.15-5.18, 4.37-5.25; scutellum length 3.54-4.02, 3.95-4.05; scutellum width 2.78-3.27, 2.95-3.44; antennal segments: 0.43-0.45 : 0.45-0.52 : 0.70-0.78 : 0.84-1.05 : 0.92-1.08, 0.42-0.45 : 0.48-0.59 : 0.77-0.78 : 0.94-0.98 : 1.05-1.08.

#### TYPE MATERIAL EXAMINED

Holotype male: [VIETNAM]: Saigon, 4621, Collection E. DE BERGEVIN, *Macroscytus niponensis?* (MNHN).

Paratypes: 1 male: [VIETNAM]: Cochinchine, Julien 1875, Muséum Paris (JAL); 1 female: [VIETNAM]: Tonkin, reg. de Hoa-Binh, A. DE COOMAN 1927, Muséum Paris (MNHN); 1 female: [VIETNAM]: Cap. St. Jacques [=Vung Tau], 8-10 Juni 89, Coll. E. FLEUTIAUX 1919, Muséum Paris (MNHN); 1 male 1 female: [VIETNAM]: Indo-China, Tonkin, R.V. DE SALVAZA, 1917-98, Brit. Mus., 1922-112 (BMNH, JAL); 1 male: [THAILAND]: Siam, A. PAVIE 1886, *Macroscytus javanus* MAYR, NOUALHIER 1896, Muséum Paris (MNHN); 1 male: [LAOS]: Laos, Vientiane, July 1915, R.V. DE SALVAZA (BMNH); 1 male: [BURMA]: Palon, Pegu, L. FEA, VIII.IX.87 (JAL).

DISTRIBUTION. - Burma, Laos, Vietnam, Thailand.

### *javanus-group*

Submargins of head with at least three setigerous punctures on each paraclypeus (fig. 402); clypeus without a pair of subapical setigerous punctures.

Key to species of *javanus*-group

1. Each paraclypeus with 3-4 submarginal setigerous punctures; each lateral margin of pronotum with a row of 5-8 submarginal setigerous punctures; costa with 2-4 setigerous punctures; 2nd antennal segment shorter than or as long as the 3rd; paramere as in fig. 404, penis as in fig. 405 ..... *javanus* (p. 239)
- Each paraclypeus with 4-8 submarginal setigerous punctures; each lateral margin of pronotum with a row of 9-16 submarginal setigerous punctures; costa with 4-9 setigerous punctures; 2nd antennal segment longer than the 3rd; paramere and penis not as above ..... 2.
2. Sternites laterally distinctly punctured, sometimes also transversely wrinkled; larger species, 8.40-10.69 mm in length ..... *nigroaeneus* (p. 241)
- Sternites finely transversely wrinkled, laterally with a few tiny punctures close to spiracles; smaller species, 5.70-7.83 mm in length ..... *badius* (p. 236)

***Macroscytus badius* (WALKER)**

(figs. 400)

*Aethus badius* WALKER, 1867: 159 [Hindustan]; KIRBY, 1891: 81.*Macroscytus badius*: DISTANT, 1899a: 222, 1902: 95, 1918: 118; WU, 1935: 269; MOIZUDDIN & AHMAD, 1990: 325 [part]; LIS, 1991b: 184.*Macroscytus brunneus*, not of FABRICIUS: SIGNORET, 1883a: 477 [part]; ATKINSON, 1887: 54; LETHIERRY & SEVERIN, 1893: 70 [part]; DISTANT, 1902: 95; BREDDIN, 1909: 263; KIRKALDY, 1910a: 112; CHANDRA, 1953: 87; STICHEL, 1962: 775 [part]; MOIZUDDIN & AHMAD, 1990: 325 [part].*Cydnus brunneus*, not of FABRICIUS: SCHIÖDTE, 1847: 453 [part].*Macroscytus subaeneus*, not of DALLAS: DISTANT, 1901a: 101 [part]; HSIAO et al. 1977: 46 [part]; AHMAD et al., 1979: 15, 18.*Macroscytus expansus* Signoret, 1883a: 479; ATKINSON, 1887: 55; LETHIERRY & SEVERIN, 1893: 70; DISTANT, 1902: 97, 1918: 118; KUMAR, 1962: 45, 50, 53, 54, 56; MOIZUDDIN & AHMAD, 1990: 325, **new synonym**.

Misidentification: TAKARA &amp; HIDAKA, 1960: 182.

**DIAGNOSIS.** - This species is best diagnosed within the *javanus*-group by the set of following characters: the body small (5.70-7.83 mm in length); the 2nd antennal segment longer than the 3rd; the head submarginally with 4-8 setigerous punctures on each paraclypeus; the pronotum laterally with more than 8 submarginal setigerous punctures; the sternites with small punctures present only close to the spiracles. The species is closely related to *M. brunneus* (SW Palearctics, Africa), but differs in the shape of the 2nd conjunctival appendage of aedeagus (figs. 400 & 401), and the body length (5.70-7.83 in *M. badius*, 6.0-9.0 in *M. brunneus*).

**DESCRIPTION.** - Body from pale brown to almost blackish brown, corium paler; umbones apically and the posterior margin of pronotum sometimes distinctly lighter (even yellowish brown) than the remaining part of disc.

Head dorsally impunctate, except for setigerous punctures and several almost indistinct tiny punctures on paraclypei; clypeus parallel-sided, free, as long as or slightly longer than paraclypei; each paraclypeus with a row of 4-8 submarginal hair-like setae; eyes brown, reddish brown or blackish brown, ocular index 2.10-2.80; ocelli orange or reddish brown, interocellar index 9.0-15.0; antennae paler than dorsum, 2nd antennal segment longer than the 3rd; rostrum of the same colour as antennae, reaching or almost reaching middle of mesosternum.

Pronotum weakly punctured, calli and posterior fifth of disc impunctate; each lateral margin with a row of 9-13 submarginal setigerous punctures.

Scutellum punctured denser than the pronotal disc, punctures slightly larger than those on the latter; anterolateral angles and the apex impunctate.

Corium distinctly punctured, punctures of the same size as those on scutellum; clavus with one complete and one or two partial rows of punctures; mesocorium with two rows of punctures paralleling clavo-corial suture, mesocorial disc almost evenly punctured; exocorium almost evenly punctured; costa with 4-7 setigerous punctures; membrane browned, distinctly surpassing the tip of abdomen.

Anterior convexity of propleuron alutaceous, apically somewhat punctured; depression and posterior convexity densely punctured; evaporatoria typical of the genus.

Sternites slightly transversely wrinkled, impunctate or with small punctures close to spiracles.

Posterior femora with conspicuous subapical tooth on the dorsal margin.

2nd conjunctival appendage as in fig. 400.

Measurements (male and female respectively): body length 5.70-7.70, 5.72-7.83; body width 3.22-4.44, 3.15-4.34; head length 0.78-1.24, 0.75-1.17; head width 1.46-1.83, 1.44-1.78; pronotum length 1.68-2.34, 1.59-2.37; pronotum width 2.90-3.98, 2.88-3.95; scutellum length 2.12-3.05, 2.12-3.07; scutellum width 1.88-2.54, 1.83-2.56; antennal segments: 0.25-0.35 : 0.33-0.50 : 0.28-0.42 : 0.36-0.53 : 0.45-0.54, 0.24-0.34 : 0.32-0.47 : 0.27-0.42 : 0.36-0.50 : 0.43-0.52.

#### TYPE MATERIAL EXAMINED

Lectotype male of *Aethus badius* WALKER (designated by LIS, 1991b: 184): [INDIA]: Ind.; SAUNDERS 65.13; Type; 73. *Aethus badius* WALKER; Brit. Mus. Type No. Hem. 321; Lectotypus, *badius* Wlk., R. LINNAVUORI det. (BMNH).

#### OTHER MATERIAL EXAMINED (63 males, 82 females)

INDIA: Bengale, 2 females (MNHN); Inde, Arrah, 1 male, det. as *Macroscytus expansus* SIGN. (MNHN); Madras Airport, India, 2 males 9 females V-1962, P. Susai NATHAN, Museum Leiden (RNH); Madras, coll. SIGNORET, 1 female, det. as *badius* det. SIGNORET (NhMW); Hissar, Deer Park, 1 female 25 VII 1980, C.W. SCHAEFER (CWS); Karumbagaram, Karikal Terr., 1 female 2 males VII 1955, P. Susai NATHAN coll. (CWS, JAL); S. India, Karikal, 1 male 3 females VII-1959, P.S. NATHAN (RNH); Pondichery, 1 male (JAL); S. India, Pondichery State, Karikal, 1 male 2 females II.1961, 3 males 6 females VII-1962, P. Susai NATHAN, Museum Leiden (RNH); Côte de Malabar, Mahé, 1 male, M. MAINDRON 1902, Muséum Paris (MNHN); Maissour, Silvapoor (Mt Tabourel), 1 female, R. OBERTHUR 1899, Muséum Paris (MNHN); S. India, Malabar, Walayar Forests (1000ft), 1 female VI-1957, Rec. P.S. NATHAN, Coll. R.I.Sc.N.B. (IRSNB); Indes anglaises, Ajmer-Rajpudana, 1 male, ex coll. MULLER, coll. R.I.Sc. N.B. (IRSNB); India, Barway, 1 male, R.P. CARDON, Coll. R.I.Sc.N.B., det. as *Macroscytus expansus* SIGN. (IRSNB); South India, Madras State, Coimbatore, 1400ft, 1 male X 1966, 3 females 3 males XI 1966, 4 females XII 1966, P.S. NATHAN (ZMA, JAL); South India, Coimbatore, 1 female 9.II.13, FLETCHER Coll., at light, det. as *Macroscytus expansus* SIGN. (BMNH); Coimbatore, Madras St. 1400', India, 1 female X.1971, 1 male IX.1972, P.S. NATHAN (CWS, JAL); Coimbatore, India, 1 male V-VI.1982, D. LIVINGSTONE, gift of D. LIVINGSTONE III 17 83 (CWS); S. India, Coimbatore, 1400ft alt., Madras St., 1 male XI.1971, 1 male III.1973, T.R.S. NATHAN (NSMT); S. India, 3200ft, Madras State, 1 female IX.1960, P. Susai NATHAN, Museum Leiden (RNH); S. India, Coimbatore, Madras State, 1400ft, 2 males 1 female XII.1958, P. Susai NATHAN, Museum Leiden (RNH); N. Delhi, 1 male 19 VII 958, ALEKSANDROV, 1 male 26-28 VII 951, E. IVANOV, det. as *Macroscytus expansus* SIGN. by KERZHNER (ZIP); Orissa, Konarak, 1 female 1 male 25.XII.1966, singled material, No. 58, leg. Gy. TOPAL (HNHM); Mettupalayam, Tamil Nadu, 450m, 1 female 1 male 30.III.1980, No.326, extracted, leg. TOPAL (HNHM); Orissa, Bhubaneswar, town, 2 females 2 males 11.II.1967, No. 170, collected on lamps, leg. Gy. TOPAL (HNHM, JAL); Chipurupalle, Vizagapatn Distr., India, 1 male, R.S. PATUCK, B.M. 1923-430 (BMNH); Bhimavaram, Kistna Distr., 1 female 25-VI-17, ISAAC Coll. (JAL); Serampur, Bengal, 1 female 2-I-1912 (JAL); Bombay, 1 male, N.B. KINNEAR, October 1912, Brit. Mus. 1931-96, det. as *Macroscytus expansus* SIGN. (BMNH); India, Pilani (Rajasthan), 1 male 20.VIII.1959, R. KUMAR, B.M. 1959-500 (BMNH); Chikkaballappura, S. India, T.V.C., 1 female, Ex. Coll. E.A. BUTLER, B.M. 1926-171 (BMNH); Mysore, H.K. SLATER, 1 female, 1901-182 (BMNH); Bandra, India, 1 female, Dr. JAYAKAR 1905-152 (BMNH); Ind. Mus., Annandale, S. end of Lake Chilka, N.E. Madras, 1 female III-10, DISTANT Coll., B.M. 1911-383 (BMNH); India, Kolimpong, 1 male V. 1961, S. KOROVIN (ZIP); South India, Kerala State, Trivandrum Dist., Poonmudi Range, 3000ft., 1 female VI.89, T.R.S.N. Coll. (CWS); South India, Anamalai Hills, Cinchona, 3500 ft, 1 male V.1964, P. Susai NATHAN (RNH).

SRI LANKA: Ceylon, 1 female, coll. SIGNORET, det. as *badius* by SIGNORET (NhMW); Ceylon, Diyatalawa, 1 male 2 IX 1908, T.B.F. (BMNH); Ceylon, S.P. Hambantota, 1 male 9.X.08, 1 female 29.XI.08, T.B.F.



(BMNH, JAL); Ceylon, Yala, 1 female 9.II.09, T.B.F. (BMNH); Elephant Pass, N.P. Ceylon, 1 female 3.01, Distant Coll. 1911-383, det. as *Aethus ceylonicus* (BMNH); Ceylon, Bopikiya, 1 female 31.I.1953, J.W.S. Pringle, B.M. 1953-175 (BMNH); SO Sri Lanka, Arugam bay, 1 male 27-30.4.1984, Döser leg. (SMNS); Sri Lanka, Uppuveli, 1 female 20.3.1982, U. Döser leg. (SMNS); Ceylon, Kandy, 1 male 23.VII.90, Pluginskij, det. as *Macroscytus expansus* Sign. by Kerzhner (ZIP); Sri Lanka, Nat. Park Wilpattu, Talawila 13 km W Maradanmaduwa, 6 females 2 males 7-9 X 982, G. Medvedev, Zaitzev (ZIP, JAL); Sri Lanka, Nat. Park Yala, Mahasilawa, 8 km ENE Palatupana, 3 females 2 males 20 X 982, G. Medvedev, Zaitzev (ZIP, JAL); Sri Lanka, 9 km ESE Maradankadawalkka, 2 females 4 males 11 X 982, G. Medvedev, Zaitzev (ZIP, JAL); Sri Lanka, Colombo, 1 male 20 X 982, Zaitzev (ZIP); Polonuruwa, Ceylon, 1 female 9.1.1979, Plossl, Collection E. Heiss Innsbruck (EHC); Ceylon, Habarana, 2 females 1.VII.79, Heiss, Collection E. Heiss Innsbruck (EHC).

BURMA: Palon (Pegú), 1 female VIII.IX.87, L. Fea, det. as *Macroscytus subaeneus* by Distant, Museo Civico di Genova (MCSN); Birmania, Schwego-Myo, 1 male Ottobre 1885, Fea, Museo Civico di Genova, det. as *Macroscytus subaeneus* by Distant (MCSN).

MALDIVES ISLANDS: Maldive Isls, Gan Addu Atoll, 2 females 3 males, W.W.A. Philips, B.M. 1959-41, 2 females 12.X.1958, W.W.A. Philips, B.M. 1959-41, 2 females 1 male 28.IX.1958, W.W.A. Philips, B.M. 1959-113, 1 female 13.IV.1959, at night in house, W.W.A. Philips, B.M. 1958-654 (BMNH, JAL); Malediven, Villingilli, 10 males 6 females 19.VII.79, Heiss, Collection E. Heiss Innsbruck (EHC, JAL).

DISTRIBUTION. - India, Sri Lanka, Maldive Islands, Burma.

The occurrence of this species in China (Wu, 1935) is still not confirmed and seems to me rather doubtful. The record from Japan (Takara & Hidaka, 1960) pertains to *Aethus pseudindicus*.

REMARKS. - *M. badius* has been for a long time regarded as a synonym of *M. brunneus* (see Lis, 1991b: 185). The synonymy was proposed by Signoret (1883a), who in the same paper described *M. expansus* as a species new to the science. Actually *M. badius* is a distinct species (as it was suggested by Distant, 1899a), and *M. expansus* should be treated as a junior synonym of the former. Unfortunately, I have not found the type material of *M. expansus* Sign., but the original description and figures match exactly *M. badius*; additionally all specimens previously determined by Signoret as *M. expansus* pertained in fact to *M. badius*.

Originally *M. badius* has been described on the basis of 6 specimens, but only four syntypes have been preserved to date. Solely the specimen from India (designated as the lectotype) appeared to be genuine *M. badius*; the syntype male from North China pertains to *M. japonensis*, and two others (one female from E. India, and one female from Ceylon) pertain to *Aethus indicus*.

### ***Macroscytus brunneus* (Fabricius)**

(fig. 401)

*Cydnus brunneus* Fabricius, 1803: 185.

*Macroscytus brunneus*: Signoret, 1883a: 477 [part]; Wu, 1935: 269; Moizzuddin & Ahmad, 1990: 325 [part].

*Macroscytus subaeneus*, not of Dallas: Moizzuddin & Ahmad, 1985: 163, 1990: 325, 326.

Misidentifications: Schiødte, 1847: 453 [part]; Signoret, 1883a: 477 [part]; Atkinson, 1887: 54; Lethierry & Severin, 1893: 70 [part]; Distant, 1902: 95; Bredin, 1909: 263; Kirkaldy, 1910a: 112; Chandra, 1953: 87; Stichel, 1962: 775 [part]; Moizzuddin & Ahmad, 1990: 325 [part].

A well-known species, distributed in the Mediterranean subregion, Africa, and the Middle East, eastwards reaching Pakistan. Morphologically related to *M. badius*, but slightly larger (6.0-9.0 mm in length), and differing in the shape of the 2nd conjunctival appendages of penis (fig. 401).

In one of my papers (Lis, 1991b: 185) I wrote that all previous records of *M. brunneus* from the Oriental Region should have pertained to *M. badius*; at present



I must say that prior records of *M. brunneus* from this Region pertain in fact to several different species of the genus *Macroscytus*.

MOIZUDDIN & AHMAD (1985, 1990) collected this species from the roots of weed *Withenia somnifera* L., under the dry leaves and damp soil, and at light.

Descriptions of eggs and larval stages were presented by MOIZUDDIN & AHMAD (1985).

#### TYPE MATERIAL EXAMINED

Lectotype male of *Cydnus brunneus* FABRICIUS (present designation): [MOROCCO]: Tanger, SCHOUSBOE, Mus. T. Lund, *Cydnus brunneus* FABR.; Type; male (ZMC).

Paralectotype male: [MOROCCO]: Type; *Cydnus brunneus* FABRICIUS (ZMC).

#### OTHER MATERIAL EXAMINED (4 males, 1 female)

PAKISTAN: Karachi, 1 female 10-10-74, 1 male 17-10-75, 2 males 8-8-1975, coll. Imtiaz AHMAD, at. light, det. as *Macroscytus subaeneus* (DALL.) by Ahmad (NHMUK); Baluchistan, Quetta, 1 male 15.VI.1931, 5,500ft, Capt. D. HARRISON, B.M. 1932-353 (BMNH).

### ***Macroscytus javanus* MAYR, distinct species**

(figs. 402-405)

*Macroscytus javanus* MAYR, 1866: 361; STÅL, 1876: 27; SIGNORET, 1881a: 646 [part], 1883a: 478 [part].

*Macroscytus javanus* MAYR, 1868: 8, objective synonym of *Macroscytus javanus* MAYR, 1866.

*Macroscytus Javanus*: LETHIERRY & SEVERIN, 1893: 71 [part].

*Aethus javanus*: WALKER, 1867: 160.

*Macroscytus subaeneus*, not of DALLAS: DISTANT, 1899a: 222 [part]; SCHOUTEDEN, 1933: 44; JOSIFOV & KERZHNER, 1978: 187, 188.

*Macroscytus subaeneus*, not of DALLAS: DISTANT, 1902: 96 [part].

*Macroscytus japonensis*, not of SCOTT: SIGNORET, 1881a: 646 [part].

Misidentifications: SIGNORET, 1881a: 646 [part], 1883a: 478 [part]; LETHIERRY & SEVERIN, 1893: 71 [part].

**DIAGNOSIS.** - The species is best diagnosed by the set of following characters: the 3rd antennal segment longer than the 2nd; each lateral margin of the pronotum with 5-8 setigerous punctures; each paraclypeus with 3-4 submarginal setigerous punctures; the sternites V-VII with the patch of small punctures posterior to the spiracles.

**DESCRIPTION.** - Body from castaneous to blackish brown, corium usually slightly paler, sometimes also umbones apically and the posterior margin of pronotum light brown or yellowish brown.

Head dorsally impunctate, or with a few tiny punctures, laterally slightly wrinkled; clypeus as long as paraclypei; each paraclypeus with 3-4 submarginal setigerous punctures (fig. 402); eyes brown or blackish brown, ocular index 2.00-2.40; ocelli yellowish brown, reddish brown or blackish brown, interocellar index 7.5-11.5; antennae brown or pale brown, 3rd segment longer than the 2nd; rostrum brown or pale brown, surpassing middle of mesosternum.

Pronotum without or sometimes with slightly developed transverse postmedian impression; puncturation of the disc as in fig. 403, punctures somewhat smaller than those on scutellum; each lateral margin with 5-8 submarginal setigerous punctures.

Scutellum distinctly punctured with exception of anterolateral angles and apex (fig. 403).

Corium distinctly punctured; clavus with one complete and two partial rows of punctures, sometimes also with a basal patch of small punctures; mesocorium with two rows of punctures paralleling clavo-corial suture, mesocorial disc with distinctly

separated punctures smaller than those on scutellum; costa with 2-4 setigerous punctures; membrane semihyaline, browned, usually surpassing the tip of abdomen.

Propleural depression coarsely punctured; evaporatoria and apex of peritreme typical of the genus.

Sternites III and IV with small punctures anterior and posterior to spiracles, sternites V-VII with a patch of punctures only posterior to spiracles; sometimes single small punctures are present also laterally to spiracles.

Male posterior femora with a distinct subapical tooth on dorsal margin, and a few smaller teeth on the ventral; male posterior tibiae with distinct subbasal triangular tubercle; female posterior femora with subapical tooth on dorsal margin, female posterior tibiae without subbasal tubercle.

Paramere as in fig. 404; apical part of penis as in fig. 405.

Measurements (male and female respectively): body length 8.05-9.05, 7.30-9.15; body width 4.14-5.01, 3.85-4.95; head length 1.24-1.46, 1.17-1.46; head width 1.90-2.15, 1.80-2.12; pronotum length 2.24-2.71, 2.02-2.68; pronotum width 4.00-4.65, 3.58-4.70; scutellum length 2.97-3.42, 2.92-3.63; scutellum width 2.36-3.05, 2.29-3.02; antennal segments: 0.33-0.42 : 0.45-0.49 : 0.59-0.61 : 0.67-0.81 : 0.74-0.78, 0.33-0.35 : 0.38-0.49 : 0.56-0.63 : 0.65-0.78 : 0.72-0.85.

#### TYPE MATERIAL EXAMINED

Lectotype male of *Macroscytus javanus* MAYR (present designation): [INDONESIA]: Novara Exp., Java; *javanus* det. MAYR; *javanus* det. SIGNOR.; Lectotype, *javanus* MAYR, labelled by R.C. FROESCHNER 59; Coll. Nat. Mus. Wien; *Macroscytus* (NhMW).

Paralectotype female: [INDONESIA]: Novara Exp., Java; *javanus* det. MAYR (NhMW).

#### OTHER MATERIAL EXAMINED (45 males, 60 females)

MALAYA: Malay Penin., Kuala Lumpur, Ex. Coll. Agr. Dept., 1 female March 1918, 1 female 4th Jan. 1931, 1 female 2nd Febr. 1916, H.M. PENDELBURY, Ex F.M.S. Museum, B.M. 1955-354 (BMNH, JAL).

SINGAPORE: Singapore, 1 male, R. BOLAN leg., ded. 30.VI.1899 (ZIZM).

INDONESIA: Sumatra Exp. 1877-1878, 1 female, Museum Leiden, det. as *Macroscytus javanus* MAYR (RNH); Tandjong Morawa, Serdang, N.O. Sumatra, 1 male, Dr. B. HAGEN, Museum Leiden, det. as *Macroscytus javanus* MAYR (RNH); Serdang, Sumatra, Sehag., v. LEEUWEN, Museum Leiden, det. as *Macroscytus javanus* MAYR (RNH); Fort de Kock, Sumatra, 920 M, 1 male 1924, 1 male 1926, leg. E. JACOBSON, Museum Leiden, det. as *Macroscytus javanus* MAYR (RNH); Sumatra, Labuan, 1 female 1 male, BILIK 1922-23, PALM, Zool. Mus. Helsinki, Loan No.18 HE 1989/180, 1989/183 (ZMHU); Sumatra, Medan, Dolok Baroe, 1 female, coll. R.I.Sc.N.B., det. as *Macroscytus badius* WALK. (IRSNB); Sumatra, Bindjei-Medan, 1 female 3 males, Dr. C.R. PRISTER, coll. Dr. D. MAC GILLAVRY (ZMA, JAL); Sumatra, Palembang, 1 female, M. KNAPPERT, coll. Dr. D. MAC GILLAVRY (ZMA); Palembang, 1 female 9.VIII.1937, 1 female 13-IX-1937, 1 male 21-XI-1937, Museum Leiden, det. as *Macroscytus javanus* MAYR (RNH); Sumatra, Padang, 1 female 1914, de GROOT, *Hahnia gibbula* v. Ell., coll. Dr. D. MAC GILLAVRY (ZMA), 1 female (MNHN); Padang Deli, O.k Sumatra, 1 female 1895, E. BUTTIKEFER, Museum Leiden, det. as *Macroscytus javanus* MAYR (RNH); Indrapura-Estate, Ost-Sumatra, 1 female, Gebr. SIEMSEN leg., ded. 18.XII.1894 (ZIZM); N. Sumatra, Deli Dolok Merangir, 3.06'N-99.03'E, 4 females 31.V.-1.VI.1972, J. KRIKKEN, no 5, ca 200m, Museum Leiden (RNH); Zuid Sumatra, Lahat, W.C. VERBOEM, 1 male 4 females 2.II.1948, Museum Leiden (RNH); Indonesia, Sumatra, Dolok Merangir, 2 males 1 female, W. DIEHL (AMNH, JAL); Malakoni, Insel Engano, Westk. v. Sumatra, 2 females, H. KÄHLER leg., Eing. Nr. 45 1938 (ZIZM); Java, 1 male, 48, det. as *Macroscytus indicus* VOLLENHOVEN, Zool. Mus. Helsinki, Loan No. HE 1989/148 (ZMHU), 1 female, coll. BERGEVIN, Muséum Paris (MNHN), 2 females, XANTHUS, det. as *javanus* by SIGNORET, det. as *subaeneus* by HORVÁTH (HNHM), 3 females 1 male (MNHN, JAL), 4 males 3 females, Museum, Leiden, det. as *Macroscytus javanus* MAYR (RNH); Malang, Java, 1 male 19 April 1933, J.G. BETREIN, det. as *Macroscytus javanus* MAYR (RNH); Java, Batavia, 1 female, P. SERRE 1906, Muséum Paris (MNHN), 1 male, Coll. SIGNORET, det. as *Javanus* det. SIGNORET (NhMW), 1 female 1 male Oct. 1947, C.v. NIDEK (ZMA); Java, Soekaboemi, 2 females, Museum Leiden, det. as *Macroscytus javanus* MAYR (RNH); Java, Weliri Pliellen, Siloewok Sawangan, 4 males, MAC GILLAVRY 1925, coll. Dr. D. MAC GILLAVRY (ZMA, JAL); Java, Banjowangi, 1 female 1 male 1909, 1 female 1 male 1911, MAC GILLAVRY, coll. Dr. D. MAC GILLAVRY (ZMA, JAL), 2 females XII 931-II 932, Lucht, det. as *Macroscytus subaeneus* by KERZHNER (ZIP, JAL); Java, Ardja-Sari, Preanger, 1 female, coll. Dr. D. MAC GILLAVRY (ZMA); Java, Slawi Tegal, 1 male Don. II.1924, Valek LUC (ZMA); Java, Soerabaya, 1 male Juliet 1891 (ZMA); Java, Soerabaya, 2 males, Museum Leiden (RNH), 3 males 1 female 1935, W.C.v. HEURN, wijde omtrek, Museum Leiden, det. as *Macroscytus javanus* MAYR (RNH); Java, Djakjakarta, 1 female 17.5.1973, H. HAZEWINKEL (ZMA); Java, Buitenzorg, 1 female 1921,

W.C.V. HEURN, coll. Dr. D. MAC GILLAVRY (ZMA); Java, Buitenzorg, 1 female 22.4.1929, J.v.d. VECHT, Museum Leiden, det. as *Macroscytus javanus* MAYR (RNH); Djeroeklegi, Zuid Banjermas, Java, 2 females X.1936, F.C. DRESCHER, Museum Leiden, det. as *Macroscytus javanus* MAYR (RNH); Java occident., Mons gede, 4000', 1 male 1893, H. FRUHSTORFER, Muséum Paris, Coll. NOUALHIER 1898 (MNHN); Java, Mts Kawie, 1 female, CLERMONT Vend., det. as *Macroscytus subaeneus* by KERZHNER (ZIP); Java, Surabaya, 1 male, Dr. FISCHER, det. as *Macroscytus subaeneus* by KERZHNER (ZIP); Java or., Blavan, Bondowoso, 1 male, H. LUCHT, 934, det. as *Macroscytus subaeneus* by KERZHNER (ZIP); K.O. Blawan, Indjen-Plateau, Java, 900-1500m, 2 females 21 XI 933, det. as *Macroscytus subaeneus* by KERZHNER (ZIP, JAL); Blawan, O. Java, 1 male 1 female 15 Dec. 1937, O. LUCHT (RNH); Java, Bogor, 1 male 1 female 15.IX.1954, A.H.G. ALSTON, B.M. 1954-414 (BMNH); Bogor, 1 female 18-III-50, on lamp, leg. Dr. KALSHOVEN (RNH); Java, Temangoeng, 1 female 1883, OUDEMANS, Coll. OUDEMANS, Coll. Zool. Mus. Utrecht, acq. 1988 (ZMA); Bogor, Java, 1 female 13.4.1950, v. OOSTSTROOM (RNH); W. Java, Garoet O Preanger, 2 females V-VI.1929, 1 female 4 males April 1930, Museum Leiden, det. as *Macroscytus javanus* MAYR (RNH); W.C. v. HEURN, Museum Leiden (RNH); Adonara, Solor Isl., 1 male, Malay Archipelago, W. DOHERTY, 1903-31 (BMNH).

DISTRIBUTION. - Malaya, Singapore, Indonesia (Sumatra, Java, Engano, Solor).

Records from China and Japan (SIGNORET, 1881a, 1883a) pertain to *M. japonensis*.

REMARKS. - The species was described by MAYR twice (1866a, 1868) on the basis of the same specimens. Up to now it has been treated as a synonym of *M. subaeneus*; the examination of the primary type material leaves no doubts that *M. javanus* is a distinct species.

### ***Macroscytus nigroaeneus* (WALKER)**

(figs. 406-409)

*Aethus nigroaeneus* WALKER, 1867: 158; LETHIERRY & SEVERIN, 1893: 81.

*Cydnus nigroaeneus*: DISTANT, 1902: 92.

*Macroscytus nigroaeneus*: HORVÁTH, 1919: 239; LIS, 1991b: 185.

*Macroscytus foveolus*, not of DALLAS: SIGNORET, 1883a: 472.

*Cydnus Ceylonicus*, not of MAYR: LETHIERRY & SEVERIN, 1893: 65 [part].

*Cydnus ceylonicus*, not of MAYR: DISTANT, 1899a: 227 [part].

*Aethus ceylonicus*, not of MAYR: KIRBY, 1891: 80 [part].

DIAGNOSIS. - This species differs from others within the *javanus*-group (except *M. badius*) in the 2nd antennal segment longer than the 3rd, each lateral margin of the pronotum bearing 12-16 submarginal setigerous punctures, and the costa with 4-9 setigerous punctures. The species can be distinguished from *M. badius* by the body length (8.40-10.69 mm in *M. nigroaeneus*, 5.70-7.83 mm in *M. badius*), and the sternites III-VI punctured in lateral two thirds (only a few small punctures close to the spiracles are present in *M. badius*).

DESCRIPTION. - Body broad (fig. 406), from blackish brown to black, corium usually more brownish; umbones of pronotum apically sometimes light brown or yellowish brown.

Head wrinkled, laterally distinctly punctured, vertex smooth; clypeus as long as paraclypei, each paraclypeus with 4-8 submarginal setigerous punctures; eyes reddish brown, brown or blackish brown, ocular index 2.45-2.90; ocelli orange or reddish brown, interocellar index 8.0-13.0; antennae brown or castaneous, 2nd segment longer than the 3rd; rostrum brown, surpassing middle coxae, sometimes reaching anterior margin of posterior coxae.

Pronotal transverse postmedian impression absent or only faintly developed; calli more or less elevated; puncturation of disc as in fig. 406, punctures larger than those on head; each lateral margin with 12-16 submarginal setigerous punctures.

Scutellum densely evenly punctured with exception of anterolateral angles and apex (fig. 406).

Corium punctured; clavus with one complete and two partial rows of punctures; mesocorium with two rows of punctures paralleling clavo-corial suture, mesocorial disc densely punctured; exocorium densely punctured; costa with 4-9 setigerous punctures; membrane hyaline, sometimes somewhat browned, surpassing the tip of abdomen.

Propleural depression, apical part of anterior convexity, and almost entire posterior convexity distinctly punctured; evaporatoria and apex of peritreme as in fig. 407.

Sternites glossy in the middle, lateral two thirds of sternites III-VI distinctly punctured and sometimes also transversely striated, the sternite VII almost impunctate.

Male posterior femora with conspicuous subapical tooth, tibiae with large subbasal tubercle.

Paramere as in fig. 408; apical part of penis as in fig. 409.

Measurements (male and female respectively): body length 8.60-10.69, 8.40-9.86; body width 4.85-6.45, 4.70-6.05; head length 1.58-1.90, 1.39-1.68; head width 2.17-2.73, 2.17-2.54; pronotum length 2.39-3.22, 2.36-3.02; pronotum width 4.47-5.90, 4.25-5.56; scutellum length 3.19-4.34, 3.19-4.14; scutellum width 2.78-3.81, 2.80-3.75; antennal segments: 0.36-0.49 : 0.56-0.77 : 0.53-0.70 : 0.70-0.87 : 0.77-0.91, 0.35-0.48 : 0.49-0.70 : 0.47-0.64 : 0.65-0.81 : 0.70-0.84.

#### TYPE MATERIAL EXAMINED

Lectotype female of *Aethus nigroaeneus* WALKER (designated by LIS, 1991b: 185): [SRI LANKA]: Ceylon, 5323; Type; 71. *Aethus nigroaeneus*; Brit. Mus., Type No. Hem. 294; Lectotype, det. J.A. Lis 1989 (BMNH).

#### OTHER MATERIAL EXAMINED (43 males, 41 females)

INDIA: S. India, Coimbatore, Madras St., 1 male 2 VII 1957, Réc. P.S. NATHAN, coll. R.I.Sc.N.B. (IRSNB), 1 male IX-1959, P. Susai NATHAN (RNH), 1400', 5 males 4 females IX 1972, 2 females X.1976, P.S. NATHAN (CWS), 6 females 3 males XI 1966, P.S. NATHAN (ZMA, JAL), 2 females V-VI.1982, D. LIVINGSTONE (CWS), 1 female X.1972, T.R.S. NATHAN (NSMT); S. India, Point Calimere, Madras St., 1 male X.1971, T.R.S. NATHAN (NSMT); South India, Anamalai Hills, Cinchona, 3500 ft, 1 female V.1968, P. Susai NATHAN, Museum Leiden (RNH); S. India, Pondicherry State, Karikal, 3 females XI. 1961, P. Susai NATHAN, Museum Leiden (RNH); S. India, Kerala, Trichur Dist., Peechi, 2 males V 1979, P.S. NATHAN (CWS, JAL); Inde Merid., Trichinopoly, 1 female, Coll. NOUALHIER 1898, Muséum Paris (MNHN); Inde, Trevandrum, 1 male March, det. as *Macroscytus foveolus*. (MNHN); Coromandel, Genji, 1 male 25 aout-15 sept. 1901, Muséum Paris, M. MAINDRON 1902 (MNHN); India or., Ramandorog, 1 male, KATONA 1919 (HNHM); Vorderindien, Madras Presid., Ramandroog, 600-100m, 1 male 6-11.1919, H. ZUSCHLAG leg., vend. 10.6.1920 (ZIZM); Madras, 1 male, det. as *foveolus* by SIGNORET, coll. SIGNORET (NhMV); Tenmalai 500-800', Travancore, S. India, 3 females 11-17-X-38, B.M.-C.M. Expdn. to S. India, Sept.-Oct. 1938, Brit. Mus. 1939-205 (BMNH); Dhikala, Naini Tal, Dist. U.P. 1 female 26.IV.08, Mus. Collr., R.H., DISTANT Coll., B.M. 1911-383 (BMNH).

NEPAL: Amiekhgani, Therai, Nepal, 1 male 7-10.10.72, lg. H. FRANZ, Ex collection E. HEISS Innsbruck (JAL).

SRI LANKA: Ceylon, 1 male, Heuser 91, det. as *Macroscytus nigroaeneus* Wlk. by R.C. FROESCHNER 59 (NhMV); Ceylon, 1 male, det. as *nigroaeneus* by HORVÁTH (HNHM); Ceylon, 1 female, KIRKALDY Coll., Brit. Mus. 1912-513 (BMNH); Anuradhapura, 1 male 27-VII78, S.L., J. TIMMER (ZMA); S-Ceylon, Wirawila, 2 males 16 Dez. 1980, T. OSTEN leg. (SMNS); Ceylon, Paradeniya, 1 male 13/IV 02, Dr. UZEL, det. as *MACROSCYTUS NIGROAENEUS* Wlk. by R.C. FROESCHNER 59 (NhMV); Ceylon, S.P., Hambantota, 2 males 9.X.08, T.B.F. (BMNH); Galge, Ruhunu Nat. Pk., Ceylon, 1 female 5 IX 1963, under stone, M. SPEIGHT, Univ. Lond. Ceylon Expdn. (JAL); Ceylon, Vavuniya N.P., 1 female 29.IX.1963, after rain, at light, M. SPEIGHT, Univ. Lond. Ceylon Expdn. (BMNH); Ceylon, Maha Illupallama, 2 males 1 female 16.X.1959, Dry zone Res. Stn., light trap, paddy section, Pres by Com. Inst. Ent., B.M. 1960-312, det. as *Macroscytus nigroaeneus* WALK. by M.S.K. GHAIURI (BMNH, JAL); Ceylon, 1 female, GREEN Coll. 91-26 (BMNH); Ceylon, 125, 1 male, ATKINSON Coll. 92-3 (BMNH); Batticaloa, Ceylon, 1 male 5-06, DISTANT Coll. 1911-383 (BMNH); Polonuruwa, Ceylon, 1 male 1 female 9.1.1979, leg. PLÖSSL, collection E. HEISS Innsbruck (EHC); Sri Lanka, 9 km SW of Anuradhapura, 1 male 10 X 982, G. MEDVEDEV (ZIP); Sri Lanka, Nat. Park Wilpattu, Talawila, 13 km W Maradanmaduwa, 6 males 11 females 7-9 X 982, ZAITZEV (ZIP); Sri Lanka, Nat. Park Yala, Mahasilawa, 8 km ENE Palatupana, 4 males 4 females 20 X 982, ZAITZEV (ZIP).

DISTRIBUTION. - India, Nepal, Sri Lanka.

REMARKS. - The species has been treated as a synonym of *Aethus ceylonicus* (MAYR) for a long time (KIRBY, 1891; DISTANT, 1899a); the examination of the type material (LIS, 1991b) proved it was a separate species of the genus *Macroscytus* FIEB.

BIOLOGICAL DATA. - One of the examined specimens has been found under stone, some others have been collected at light.

### *lansbergi*-group

Head submarginally with a row of setigerous punctures extending from eye to eye, clypeus with a pair of subapical setigerous punctures (fig. 410).

### ***Macroscytus lansbergi* (SIGNORET)** (figs. 410-411)

*Geotomus Lansbergi* [lap.] SIGNORET, 1883c: 48.

*Geotomus Lansbergi*: LETHIERRY & SEVERIN, 1893: 72 [emend.].

*Geotomus lansbergi*: SYNAVE, 1969: 2.

*Macroscytus lansbergi*: LIS, 1991b: 185.

DIAGNOSIS. - The species differs from all Oriental representatives of the genus in the presence of two subapical setigerous punctures on clypeus.

DESCRIPTION. - Head brownish black, dorsally wrinkled and slightly punctured, vertex smooth; clypeus as long as paraclypei, subapically with two setigerous punctures (fig. 410); each paraclypeus with a row of 7 submarginal setigerous punctures; eyes brown, ocular index 3.18; ocelli reddish brown, interocellar index 7.0; antennae pale brown, 2nd segment only slightly shorter than the 3rd; rostrum brown, surpassing slightly anterior coxae.

Pronotum brownish black, posterior part more chocolate brown; transverse postmedian impression absent; each lateral margin with 9-11 submarginal setigerous punctures.

Scutellum of the same colour as pronotum, densely punctured with exception of the apex and anterolateral angles.

Corium chocolate brown, somewhat lighter than pronotum and scutellum; clavus with one complete and two partial rows of punctures; meso- and exocorium almost evenly punctured; costa with 4 setigerous punctures; membrane hyaline, slightly browned, distinctly surpassing the tip of abdomen.

Propleuron chocolate brown; evaporatoria as in fig. 411.

Sternites chocolate brown, sutures and each lateral margin blackish brown; lateral parts of segments slightly wrinkled, sutures with tiny punctures. Legs brown, tarsi yellowish brown; posterior femora and tibiae not specifically modified.

Measurements (female only): body length 5.41; body width 3.09; head length 0.85; head width 1.41; pronotum length 1.58; pronotum width 2.80; scutellum length 2.05; scutellum width 1.88; antennal segments: 0.44 : 0.53 : 0.55 : 0.63 : 0.67.



## TYPE MATERIAL EXAMINED

Lectotype female of *Geotomus lansbergi* SIGNORET (designated by SYNAVE, 1969: 2): [INDONESIA]: Java Oriental, M. Ardjoeno, coll. R.I.Sc.N.B.; VAN LANSBERG; *Macroscytus Lansbergi*; Type; Holotype; *Geotomus lansbergi* SIGNORET (IRSNB).

DISTRIBUTION. - Java.

### Genus *Microporus* UHLER

*Microporus* UHLER, 1872: 394 [name only], 1876: 275.

*Cydnus* [part] of authors, nec FABRICIUS, 1803.

*Aethus* [part] of authors, nec DALLAS, 1851

DIAGNOSIS. - The 5-segmented antennae, the submargins of the paraclypei with both hair-like and peg-like setae, the large mesopleural evaporatorium occupying at least one third of the mesopleural surface, and the lobe-like or loop-like apex of the peritreme will easily separate this genus from any other within the tribe *Geotomini*.

DESCRIPTION. - Head broader than long; clypeus free, almost parallel-sided, subapically with two peg-like setae; each paraclypeus with a submarginal row of setigerous punctures bearing both peg-like and hair-like setae; ocelli present; each eye with apical seta; antennae 5-segmented, moderately slender, 1st and 2nd segment cylindrical, 3rd, 4th and 5th slightly rounded; rostrum 4-segmented, usually surpassing the middle of mesosternum.

Pronotum broader than long, laterally with numerous hair-like setae; anterior margin angularly insinuated; umbones swollen.

Scutellum broad, only slightly longer than broad, though sometimes somewhat broader than long; apex broadly rounded; basal and lateral rows of punctures conspicuous.

Corium divided into clavus, meso- and exocorium; clavus usually with one complete and two partial rows of punctures; mesocorium with two rows of punctures paralleling clavo-corial suture, mesocorial disc punctured; costa with numerous setigerous punctures bearing hair-like setae; membranal suture almost straight, membrane normally developed, not reduced.

Anterior and posterior convexity of propleuron well developed, depression deep; evaporatorium on mesopleuron large, occupying at least one third of the surface, evaporatorium on metapleuron usually large, though sometimes only a little outlining peritreme; apex of peritreme lobe-like or loop-like (figs. 412, 414, 415), osteolar opening visible in ventral view.

Sternites laterally with transverse rugae, usually also punctured; lateral margins with two long setae on each sternite.

Anterior tibiae distally expanded, with stout spines on margins; dorsal side of posterior tibiae flattened and bearing neither setae nor spines, margins with long spines and setae, ventral side of posterior tibiae slightly flattened, bearing only a few long spines. Male genitalia of the geotomine type.

TYPE OF GENUS. - *Microporus obliquus* UHLER, 1872, by monotypy.

#### Key to species of *Microporus*

1. Body bicoloured; head, pronotum and scutellum dark brown, corium distinctly paler; eyes large, rounded, ocular index 2.35-2.41 ..... *vietnamicus* (p. 247)
- . Body uniformly coloured, from brown to almost black; eyes smaller, narrow, ocular index



exceeding 3.0 . . . . . 2.

2. Apex of peritreme somewhat elongated, not large, ending far from the lateral margin of metapleural evaporative area (fig. 412); Oriental species. . . . . *laticeps* (p. 245)
- Apex of peritreme almost circular, large, ending close to the lateral margin of metapleural evaporative area (fig. 414); Palaearctic species . . . . . *nigritus* (p. 247)

### ***Microporus laticeps* (SIGNORET)**

(figs. 412-413)

*Cydnus laticeps* SIGNORET, 1882d: 162; LETHIERRY & SEVERIN, 1893: 66; WU, 1933: 208, 1935: 268.

*Aethus laticeps*: KIRKALDY, 1910a: 112.

*Cydnus nigrita*, not of FABRICIUS: LETHIERRY & SEVERIN, 1893: 67 [part].

*Cydnus nigritus*, not of FABRICIUS: SIGNORET, 1882d: 147 [part]; DISTANT, 1901a: 101 [part], 1902: 90; MAXWELL-LEFROY, 1909: 306; WU, 1935: 268 [part]; CHANDRA, 1953: 87.

*Aethus nigritus*, not of FABRICIUS: HSIAO et al., 1977: 43 [part].

*Macroscytus electus* DISTANT, 1908: 427; MOIZUDDIN & AHMAD, 1990: 325, syn. with *M. laticeps* by LIS, 1993b: 95.

*Aethus electus*: LIS, 1991b: 174.

*Cydnus germanus* BREDDIN, 1912: 96; DISTANT, 1918: 117, **new synonym**.

*Aethus germanus*: MOIZUDDIN & AHMAD, 1990: 312.

*Microporus laticeps*: LIS, 1993b: 95.

Misidentification: HOBERLANDT, 1960: 56, 1984: 72.

**DIAGNOSIS.** - The species is closely related to *M. nigritus* in the body shape and colouration, but can be easily distinguished from the latter by the shape and size of the peritremal apex: in *M. laticeps* it is small, somewhat elongated and ends far from the lateral margin of the metapleural evaporative area (fig. 412), while in *M. nigritus* it is large, almost circular and ends close to the lateral margin of the metapleural evaporative area (fig. 414).

**DESCRIPTION.** - Body from brown to almost black, in dark specimens body margins somewhat paler.

Head alutaceous, finely punctured; clypeus as long as or slightly shorter than paraclypei, with two subapical peg-like setae; each paraclypeus submarginally with a row of 6-10 peg-like setae and 4-6 hair-like setae; eyes narrow, brown or reddish brown, ocular index 3.40-4.20; ocelli small, orange, brown or reddish brown, interocellar index 3.0-5.0; antennae brown or dark brown; rostrum pale brown or brown, reaching middle coxae.

Anterior and lateral parts of pronotal disc finely punctured, postcallal part with several larger punctures; each lateral margin with 14-26 submarginal setigerous punctures.

Scutellum broad, distinctly punctured with large crowded punctures, apex finely punctured; anterolateral angles impunctate.

Corium of the same colour as pronotum, sometimes only slightly paler, but never yellowish brown; clavus with one complete and two partial rows of punctures; mesocorium with two rows of punctures paralleling clavo-corial suture, mesocorial disc and exocorium almost evenly punctured; costa with 6-13 setigerous punctures; membrane hyaline, slightly browned, reaching or surpassing the apex of abdomen.

Propleuron polished, depression with a few punctures; mesopleural evaporatorium posteriorly with a wedge-shaped polished band running to the apex of peritreme; the latter somewhat elongated, ending far from the lateral margin of evaporative area (fig. 412).

Sternites laterally wrinkled and punctured.

Legs brown or dark brown, tarsi yellowish brown; femora and tibiae not specifically modified.

Paramere as in fig. 413.

Measurements (male and female respectively): body length 4.55-5.66, 4.02-5.35; body width 2.65-3.29, 2.65-3.27; head length 0.60-0.86, 0.75-0.98; head width 1.19-1.44, 1.18-1.44; pronotum length 1.34-1.78, 1.46-1.83; pronotum width 2.56-3.02, 2.51-3.12; scutellum length 1.66-1.83, 1.65-1.95; scutellum width 1.71-2.19, 1.68-2.05; antennal segments: 0.18-0.23 : 0.22-0.27 : 0.22-0.27 : 0.27-0.34 : 0.29-0.31, 0.19-0.23 : 0.22-0.25 : 0.26-0.30 : 0.31-0.36 : 0.33-0.41.

#### TYPE MATERIAL EXAMINED

**Lectotype** male of *Cydnius laticeps* SIGNORET (designated by LIS, 1993b: 95): [HONG KONG]: Fr.fld., Hong Kong 1864; *laticeps* det. SIGNOR.; **Lectotype**, *laticeps* SIGN., labelled by R.C. FROESCHNER 59; Coll. Nat. Mus. Wien (NhMW).

**Paralectotypes** of *Cydnius laticeps* SIGNORET: 4 females: [HONG KONG]: Fr.fld., Hong Kong 1864; **Paralectotype** (NhMW).

**Lectotype** male of *Macroscytus electus* DISTANT (designated by LIS, 1991b: 175): [INDIA]: Purneah, 9738/14; Type; DISTANT coll. 1911-383; *Macroscytus electus* DIST. Type; Brit. Mus. Type No. Hem. 322; **Lectotype** det. J.A. LIS 1989 (BMNH).

**Paralectotype** female of *Macroscytus electus* DISTANT: [INDIA]: Paratype; Purneah 9736/14 DISTANT; *Macroscytus electus* DISTANT; DISTANT Coll. 1911-383 (BMNH).

#### OTHER MATERIAL EXAMINED (64 males, 82 females, 1 larva)

**NEPAL:** Nepal, B.M. Nepal Expd., 1949, 2 males, B.M. 1949-637 (BMNH); Nepal, Phewa Tal., Nr. Pokhara, 2500ft, 1 male 9.V.1954, J. QUINLAN (JAL); Landrung, Nepal, 1 female 9.10.1980, 2000m, Tonkeli P. leg., Collection E. HEISS Innsbruck (EHC); Weg v. Pokhara, Zentral-Nepal, 1 female Sept.-Okt. 1971, Ig. H. FRANZ, Collection E. HEISS Innsbruck (EHC); Z-Nepal, zw. Pokhara u. Jonson, 1 female VIII.1985, leg. PREULER, Collection E. HEISS Innsbruck (JAL); Godawari, 1700m, Nepal, 1 male Oct. 16, 1979, M. SATO leg. (NSMT).

**INDIA:** Barway, 1 female, R.P. CARDON (IRSNB); W. Bengal, Kurseong, 1 female 1 male 1904, R.P. VERSCHRAEGHEN (IRSNB, JAL); Inde, Bihar, Raxaul, 2 females 24 X 1956, leg. Y. DOMALAIN (IRSNB); Nilgiri Hills, Singara (3400ft), 1 male V 1954, Rec. P.S. NATHAN (IRSNB); Nilgiri Hills, Cherangode, 3500ft, 4 females 2 males X-XI 1950, P.S. NATHAN (CWS, JAL); Indes Anglaïses, Pedong, Region de Darjeeling, Chasseurs indigenes, 2 males 1934, Muséum Paris (MNHN); Inde mer., Trichinopoli, 3215, 1 female, collection E. de BERGEVIN (MNHN), Trichinopoli, 1 male, coll. NOUALHIER (MNHN); Kashmir, Srinagar, Zabarwon Hill, Pari Makal, 1 female 25.V.1967, under stones, from dung, No. 393, leg. Gy. TOPAL (HNHM); Sikkim, Gopaldhara, Rungbong Vall., 42 females 26 males 1 larva, H. STEVENS (BMNH, JAL); Sikkim, Rongli Chu, 3000ft, 1 male 29.II.1924, Maj. R.W.G. HINGSTON (BMNH); N. India, Pedong, Darjeeling, 4 females 5 males, L. DUREL, B.M. 1935-11 (BMNH, JAL); Goldpadhara, Darjeeling, 3440-4720ft, 4 females 1 male, on ground, H. STEVENS, det. as *Cydnius nigratus* FABR. (BMNH); Simring, Bw. Darjeeling, 2400ft, 1 female, H. STEVENS (BMNH); Khasia Hills, India, 1 male 1896-135 (BMNH); Dodabetta, Nilgiris, 8000ft, 1 male 1-8.V.16, Ramakrishna coll. (BMNH); Chikkaballapura, India, 1 female, T.V. CAMPBELL, det. as *C. nigratus*, South India, T.V. CAMPBELL coll., B.M. 1930-599 (BMNH); Dehra Dun, 1 female 5.2.1913, A.D. IMMS, From Ind. Mus., DISTANT Coll., B.M. 1911-383, under salbark (BMNH); West-Himalaya, Poo bei Simla, 1 male 1 female, Cl. SPILCHAL det. 28.XI.1913, det. as *Cydnius nigrata* F., E. WAGNER det. (ZIZM); Nilgiri, Coonoor, 1 female, Muséum Paris, M. MAINDRON 1902 (MNHN); Gopaldhara, Darjeeling, 1 male 19-IX-16, on ground, 3.440-4.720 ft., H. STEVENS (BMNH); South India, Madras State, Anamalai Hills, Kadamparai, 3500ft, 1 male 2 females V.1963, P. Susai NATHAN (RNH); South India, Anamalai Hills, Cinchona 3500ft, 1 female XI-1959, 1 male 1 female IV-1960, 1 male 1 female V-1962, 1 male V-1963, 1 male 1 female V-1964, P. Susai NATHAN, Museum Leiden (RNH); India, Karikal, Pondichery State, 1 male V-1962, P. Susai NATHAN, Museum Leiden (RNH); N-Indien, Darjeeling-Kalimpong, 1 female 4.84, native Coll., Collection E. HEISS Innsbruck (EHC); Madura, Ind. or., 2 females, STAUDINGER & BANG-HAAS (ZIP).

**BURMA:** Rangoon, Birmahia, 1 male V 1885, FEA, Museo Civico di Genova, det. as *Cydnius nigratus* FABR. by DISTANT (MCSN).

**LAOS:** Xieng Khouang, Thalan, 1 female 20.XI.1917, R.V. de SALVAZA, det. as *Aethus nigrata* F. (BMNH).

**VIETNAM:** Annam, Touranne, 1 male, (JAL); Tonkin, Lao-Kay, 1 male, Muséum Paris, coll. E. FLEUTIAUX 1919 (MNHN); Tonkin, Region de Hoa-Binh, 1 female, Muséum Paris 1931, A. de COOMAN (MNHN); Tonkin, Hoabinh, 3 males Aug. 1918, R.V. de SALVAZA, Brit. Mus. 1922-112 (BMNH, JAL); Tonkin, Bao-Ha, 1 male X-XII.1923, H. STEVENS, Sladen-Godman Trust Expd., B.M. 1924-329 (BMNH); Saigon, Cochinchina, 1 female Dec. 1923, E. le MOULT, Mus. Leiden (RNH).

**HONG KONG:** Hong Kong, J.J. WALKER, 1 female Feb.-May 93, 145 (BMNH).

**SOUTH CHINA:** China, Futschau, 1 female, G. SIEMSEN leg., vend. 25.8.1905 (ZIZM); Paran, Formosa,

1 male I-IV.1926, T. KANO, Formosa, T. KANO, NSMT-I-He 3790 (NSMT).

PHILIPPINES: Luzon, Baguio, Banguet, 1 male, BAKER (JAL).

INDONESIA: Banjoewangi, Java, Mc GILLAVRY, coll. Dr. D. MAC GILLAVRY (ZMA).

DISTRIBUTION. - India, Nepal, Burma, Laos, Vietnam, South China (Taiwan, Fujian), Hong Kong, Philippines, Java.

The records from Pakistan (HOBERLANDT, 1960) and Afghanistan (HOBERLANDT, 1984) pertained to *Fromundiellus peshawarensis*.

REMARKS. - This species has for a long time been regarded as a member of the genus *Aethus* DALL.; it was placed in a proper genus only recently (Lis, 1993b).

BIOLOGICAL DATA. - One examined female has been collected under stones, from dung; several other specimens have been caught on ground.

### ***Microporus nigrinus* (FABRICIUS)**

(fig. 414)

*Cimex nigrinus* FABRICIUS, 1794: 123.

*Cydnus* (*Trichosternus*) *nigrinus*: MULSANT & REY, 1866: 24.

*Cydnus nigrinus*: SIGNORET, 1881a: 637, 1882d: 147 [part]; Wu, 1935: 268 [part].

*Cydnus nigrinus*: FABRICIUS, 1803: 184; LETHIERRY & SEVERIN, 1893: 67 [part]; BREDDIN, 1912: 96.

*Aethus nigrinus*: WALKER, 1867: 148; STÅL, 1869: 121.

*Aethus nigrinus*: HSIAO et al., 1977: 43 [part]; Lis, 1991b: 177.

*Microporus nigrinus*: ESAKI, 1950: 185; TAKENOUCI & MURAMOTO, 1968: 4; Lis, 1993b: 94.

*Cydnus nitritus* [sic]: TAKENOUCI & MURAMOTO, 1968: 14, 1969: 4.

*Cimex fusco-niger* GOEZE, 1778: 250; syn. by LETHIERRY & SEVERIN, 1893: 67.

*Aethus fusconiger*: KIRKALDY, 1910a: 112.

Misidentifications: SIGNORET, 1882d: 147 [part]; LETHIERRY & SEVERIN, 1893: 67 [part]; DISTANT, 1901a: 101, 1902: 90; MAXWELL-LEFROY, 1909: 306; Wu, 1935: 268 [part]; CHANDRA, 1953: 87; HSIAO et al., 1977: 43 [part].

A well-known Palaearctic species, recorded also from North India and the Oriental part of China. Morphologically similar to *M. laticeps*, but differs from the latter in the characters given in the key. Evaporatoria as in fig. 414.

MATERIAL EXAMINED (4 males, 5 females)

CHINA: Shanghai, 2 females 1 male 22 V 1934, E. SUENSON, Chen, Zool. Mus. Helsinki (ZMHU); Peking, 1 female 1 male, C.F. Wu, B.M. 1933-36 (BMNH, JAL); Thian-S., 1 female, Musart, Eing. Nr. ZMH-5/1978 (ZIZM); Kouy-Tchéou, Rég. de Pin-Fa, 1 male, Muséum Paris, Pére CAVALERIE 1908 (MNHN); China, Chenfu Wu, 1 male, B.M. 1959-186, det. as *Cydnus nigrinus* F., det. R.J. IZZARD 1935 (BMNH).

NORTH INDIA: Cachemire, Poo, 1 female, (IRSNB).

### ***Microporus vietnamicus*, new species**

(fig. 415)

DIAGNOSIS. - The new species can be easily separated from the other two of the genus by the bicoloured body (the head, pronotum and scutellum dark brown, the corium distinctly paler).

DESCRIPTION. - Body bicoloured; head, pronotum and scutellum dark brown, corium distinctly paler.

Head dorsally punctured with numerous tiny punctures; clypeus slightly shorter than paraclypei, subapically with two peg-like setae; each paraclypeus with a row of 11-12 submarginal setigerous punctures (7-8 peg-like setae, 4 hair-like setae); eyes dark brown, rounded, ocular index 2.35-2.41; ocelli reddish brown,

interocellar index 10.0-13.0; antennae pale brown; rostrum pale brown, reaching middle of mesosternum.

Pronotum with punctures larger than those on head, disc punctured; calli slightly elevated; each lateral margin with more than 20 submarginal setigerous punctures; umbones distinctly swollen.

Scutellum with almost evenly spaced punctures of the same size as those on pronotum; base and apex impunctate.

Corium yellowish brown with brown punctures larger than those on scutellum, mesocorium slightly darker than clavus and exocorium; clavus with one complete and two partial rows of punctures; mesocorium with two rows of punctures paralleling clavo-corial suture, mesocorial disc with large punctures; exocorium almost impunctate except for a row of punctures; costa with 11-14 setigerous punctures; membrane hyaline, slightly browned, distinctly surpassing the tip of abdomen.

Propleuron alutaceous, depression with a few punctures; evaporatoria as in fig. 415. Sternites alutaceous, laterally transversely wrinkled.

Legs pale brown, spines and setae dark brown.

Measurements (female only): body length 3.80-3.95; body width 2.22-2.37; head length 0.57-0.66; head width 1.02-1.09; pronotum length 1.07-1.08; pronotum width 2.12-2.19; scutellum length 1.41-1.49; scutellum width 1.34-1.46; antennal segments: 0.15-0.20 : 0.15-0.17 : 0.18-0.20 : 0.21-0.25 : 0.20-0.27.

#### TYPE MATERIAL EXAMINED

Holotype female: [VIETNAM]: Vietnam, Bac-Thai, Thai-Nguyen, 30.X.-7.XI.1976, L. MEDVEDEV leg. (JAL).

Paratype female: [VIETNAM]: the same data as the holotype (JAL).

DISTRIBUTION. - Vietnam.

### Genus *Paraethus*, new genus

DIAGNOSIS. - The new genus is best diagnosed by the set of following characters: the antennae 5-segmented; the head bearing both peg-like and hair-like setae in a submarginal row; the clypeus subapically with a pair of setigerous punctures; the anterior margin of pronotum angularly insinuated in the middle; the umbones of the pronotum not swollen; the apex of the peritreme posteriorly with a claw-like process; the posterior tibiae distinctly broadened and compressed. The genus is closely related to the African *Geocnethus* HORV. in the body shape, and the presence of a claw-like process on the posterior margin of the peritremal apex; nevertheless it can be readily distinguished from the latter by the head vestiture (head bears only hair-like setae in *Geocnethus*, peg-like setae are never present).

DESCRIPTION. - Head semicircular, broader than long; clypeus as long as or shorter than paraclypei; subapical part of clypeus with a pair of setigerous punctures; each paraclypeus with a submarginal row of setigerous punctures bearing peg-like setae; eyes narrow, each with a distinct apical spine; ocelli present; antennae 5-segmented.

Pronotum broader than long; disc undivided into lobes, distinctly punctured with exception of calli; anterior margin angularly insinuated in the middle; umbones not swollen; each lateral margin with a submarginal row of setigerous punctures.

Scutellum longer than broad; disc punctured except for anterolateral angles; basal and lateral rows of punctures distinctly developed; apex tongue-like.

Corium divided into clavus, meso- and exocorium; disc of each part punctured, mesocorium additionally with two rows of punctures paralleling clavo-corial suture; costa with setigerous punctures; membranal suture straight, membrane normally developed, not reduced.

Propleuron with deep depression; evaporatoria on meso- and metapleuron large; apex of peritreme posteriorly with claw-like process (fig. 416).

Sternites glossy in the middle, sides punctured, sometimes also wrinkled.

Anterior tibiae compressed and expanded, dorsal margin with stout spines; middle tibiae slightly flattened; posterior tibiae distinctly broadened and compressed, with numerous spines on margins.

Genitalia of the geotomine type.

TYPE OF GENUS. - *Paraethus ajmericus* n.sp.

REMARK. - At present the genus contains only one species; nevertheless I suppose that future studies, especially on the African representatives of the *capicola*-group (sensu LINNAVUORI, 1993) of *Aethus* DALL. will prove that numerous species previously placed in the genus *Aethus* should be actually transferred to *Paraethus*.

### ***Paraethus ajmericus*, new species**

(figs. 416-418)

DIAGNOSIS. - This is the only known species of the genus.

DESCRIPTION. - Head blackish brown or black, lateral margins more brownish; dorsal surface slightly wrinkled and distinctly punctured; clypeus as long as or slightly shorter than paraclypei, subapically with two setigerous punctures bearing hair-like setae; each paraclypeus submarginally with a row of 10-12 peg-like setae; eyes protruding, blackish brown, ocular index 2.91-3.06; ocelli reddish brown or brown, interocellar index 2.0-3.0; antennae brown, sometimes distinctly paler than dorsal body surface, 2nd segment longer than the 3rd; rostrum brown, reaching middle coxae.

Pronotum blackish brown or black, posterior part more brownish; umbones not swollen; disc distinctly punctured; each lateral margin with 13-16 submarginal setigerous punctures.

Scutellum castaneous or brownish black, distinctly punctured; punctures larger than those on pronotum; anterolateral angles and apex almost impunctate.

Corium of the same colour as scutellum or somewhat paler; clavus with one complete and two partial rows of punctures; mesocorium with two rows of punctures paralleling clavo-corial suture, mesocorial disc evenly punctured; exocorium densely punctured; all punctures of the same size as those on scutellum; costa with 5-7 setigerous punctures; membrane semihyaline, browned, surpassing the tip of abdomen.

Propleuron brown or castaneous, depression with several punctures; evaporatoria with wedge-shaped polished band; apex of peritreme posteriorly with claw-like process (fig. 416).

Sternites brown or castaneous, glossy in the middle, lateral parts distinctly punctured, especially around spiracles and close to sutures.

Legs brown, spines blackish brown or reddish brown; posterior tibiae distinctly compressed and broadened.

Penis as in fig. 417; paramere as in fig. 418.

Measurements (male and female respectively): body length 8.00-8.15, 7.60; body width 4.85-4.95, 4.60; head length 1.29-1.34, 1.26; head width 2.32-2.25, 2.07; pronotum length 2.71-2.73, 2.39; pronotum width 4.65-4.80, 4.29; scutellum length 3.05-3.15, 3.02; scutellum width 2.98-3.00; antennal segments: 0.45-0.49 : 0.45-0.48 : 0.41-0.42 : 4th and 5th missing, 0.36-0.38 : 0.43-0.47 : 0.38-0.42 : 4th and 5th missing.

TYPE MATERIAL EXAMINED

Holotype male: [INDIA]: Indes anglaises, Ajmer-Rajpudana, ex coll. MULLER, Coll. R.I.Sc.N.B. (IRSNB).

Paratypes: 3 males and 1 female: [INDIA]: the same data as the holotype (IRSNB, JAL).

DISTRIBUTION. - India.

### Genus *Pseudoscoparipes* Lis

*Pseudoscoparipes* Lis, 1990b: 223.

DIAGNOSIS. - The genus is best diagnosed by the set of following characters: the antennae 5-segmented; the eyes without the apical spine; the submargins of the head with both peg-like and hair-like setae; the apex of the peritreme hood-like, posteriorly with a narrow polished band; the posterior tibiae more or less flattened and compressed (but not as much as in *Scoparipes*), dorsally bearing a row of several short hairs.

DESCRIPTION. - Body elongately ovate (figs. 419, 435).

Head broadly rounded in outline; paraclypei equal to or slightly longer than clypeus, and each bearing a row of 9-13 submarginal setigerous punctures (peg-like and hair-like setae); clypeus with a pair of subapical peg-like setae; eyes projecting beyond lateral margins of head, each without apical spine; ocelli present; antennae 5-segmented.

Pronotum broader than long, more or less punctured, laterally with 6-28 submarginal setigerous punctures; anterior margin angularly insinuated; umbones not swollen.

Scutellum longer than broad; apex rounded, somewhat elongated; basal and lateral rows of punctures distinctly developed.

Corium divided into clavus, meso- and exocorium; costa either without or with setigerous punctures; membrane normally developed, not reduced, membranal suture almost straight.

Propleural depression distinctly punctured; evaporative areas large (fig. 450); peritreme terminating in a lobe, with the opening surrounded by a hood-like auricle; the latter with very narrow polished area posteriorly (figs. 421, 450).

Anterior tibiae apically expanded, provided with strong spines on margins; posterior tibiae compressed (but not as much as in the genus *Scoparipes*), dorsally with a line of few hairs in both sexes.

Each sternite laterally with distinct median tubercle bearing long setae.

Penis large, theca strongly sclerified; ductus seminis either slender (*Pseudoscoparipes* s.str. - fig. 423) or stout (sgen. *Aethiellus* - figs. 426, 433, 443, 448); hypophysis of paramere modified into long or short blade process.

TYPE OF GENUS. - *Pseudoscoparipes nilgircus* Lis, 1990, by original designation.



REMARKS. - *Pseudoscoparipes*, *Scoparipes* and *Scoparipoides* form the group of closely related genera showing the same type of head vestiture, the similar modification of the peritremal apex, and the alike general shape of parameres; most probably the three genera have originated from the common ancestor.

#### Key to subgenera of *Pseudoscoparipes*

1. Ductus seminis slender (fig. 423), blade process of paramere short (fig. 422); larger species, body length 9.51-11.73 mm . . . . . *Pseudoscoparipes* (p. 251)
- Ductus seminis stout (figs. 426, 433, 443, 448), blade process of paramere long (figs. 425, 428, 432, 437, 440, 442, 447, 451); smaller species, body length 7.50-9.71 mm . . . . . *Aethiellus* (p. 252)

#### Subgenus *Pseudoscoparipes* s. str.

DIAGNOSTIC CHARACTERS. - Penis with slender ductus seminis, paramere with short blade process; body length 9.51-11.73 mm.

TYPE OF SUBGENUS. - *Pseudoscoparipes nilgircus* Lis, 1990.

#### *Pseudoscoparipes (Pseudoscoparipes) nilgircus* Lis (figs. 419-423)

*Pseudoscoparipes nilgircus* Lis, 1990b: 223; Lis, 1991b: 187.

DIAGNOSIS. - This is the only species known to belong to this subgenus.

DESCRIPTION. - Body (fig. 419) black or blackish brown.

Head striated and moderately punctured (fig. ); each paraclypeus with 11-13 submarginal setigerous punctures; clypeus as long as paraclypei, subapically with a pair of setigerous punctures; eyes reddish brown or yellowish brown; ocular index 3.70-5.20; ocelli of the same colour as eyes, interocellar index 2.0-3.0; antennae brown or pale brown, 2nd segment longer than the 3rd; rostrum brownish black or brown, always surpassing middle coxae, in some cases reaching even posterior ones.

Pronotum about 1.6-1.7 times broader than long; anterior margin deeply insinuated; disc distinctly punctured; each lateral margin with row of 19-28 submarginal setigerous punctures (fig. 419).

Scutellum distinctly punctured, with exception of apex and anterolateral angles; punctures slightly larger than those on pronotum.

Corium distinctly punctured, clavus with one complete and two partial rows of punctures; mesocorium with two rows of punctures paralleling clavo-corial suture, mesocorial disc almost evenly punctured; exocorium densely punctured; costa with 6-9 setigerous punctures; membrane brown, reaching or surpassing the tip of abdomen.

Propleural depression, sometimes also base of anterior convexity with numerous punctures; evaporatoria large, apex of peritreme as in fig. 421.

Sternites glossy in the middle, punctured and striated on sides.

Legs brownish black, tarsi brown; fore tibiae broad, with stout blunt spines on outer margin; posterior tibiae compressed, dorsally with a line of few hairs, lateral

margins with spines.

Penis with slender ductus seminis (fig. 423); paramere as in fig. 422.

Measurements (male and female respectively): body length 10.92, 9.51-11.73, body width 6.23, 5.59-7.08, head length 1.80, 1.59-1.80, head width 2.56, 2.20-2.63, pronotum length 3.64, 3.43-3.93; pronotum width 5.80, 4.90-6.25; scutellum length 3.88, 3.53-4.52; scutellum width 4.03, 3.14-4.33; antennal segments 0.63 : 0.93 : 0.85 : 4th and 5th missing; 0.50-0.63 : 0.59-0.80 : 0.46-0.73 : 0.69-0.98 : 0.73-0.83.

#### TYPE MATERIAL EXAMINED

Holotype male of *Pseudoscoparipes nilgircus* Lis: [INDIA]: South India, Devala, 3200 ft, Nilgiri Hills, V 1961, P. SUSAI NATHAN, Museum Leiden, *Pseudoscoparipes nilgircus* gen. et sp.n., det. J.A. Lis 1989; Holotype det. J.A. Lis 1989 (RNH).

Paratypes: 3 females: [INDIA]: South India, Devala, 3200 ft, Nilgiri Hills, V 1961, P. SUSAI NATHAN, Museum Leiden, *Pseudoscoparipes nilgircus* gen. et sp.n., det. J.A. Lis 1989; Paratype det. J.A. Lis 1989 (RNH); 1 female: [INDIA]: South India, Madras State, Anamalai Hills, Kadamparai, 3500 ft, V 1963, P. SUSAI NATHAN, Museum Leiden, *Pseudoscoparipes nilgircus* Lis, det. J.A. Lis; Paratype (RNH).

#### OTHER MATERIAL EXAMINED (7 females)

INDIA: South India, Anamalai Hills, Cinchona, 3500ft: 3 females V 1976, P.S. NATHAN (CWS, JAL), 1 female IV.1969, P.S. NATHAN (ZMA), 2 females V. 1976, T.R.S. NATHAN (NSMT); India Mérid., Travancore, 1 female, coll. NOUALHIER 1898, Muséum Paris (MNHN); Nilgherie, Madras, 1 female, det. as *insignis* by SIGORET (NHMW).

DISTRIBUTION. - India

### Subgenus *Aethiellus*, new subgenus

DIAGNOSTIC CHARACTERS. - Penis with stout ductus seminis, paramere with long blade process; body length 7.50-9.71 mm.

TYPE OF SUBGENUS. - *Cydnus vollenhoveni* SIGNORET, 1881.

#### Key to species of sg. *Aethiellus*

1. Costa with 2-7 setigerous punctures . . . . . 2.
- Costa either without or with 1 setigerous puncture . . . . . 3.
2. Ocelli small, distance between ocelli about 5-6 times larger than a diameter of ocellus; paramere as in figs. 424 & 425 . . . . . *birmanus* (p. 253)
- Ocelli larger, distance between ocelli about 3 times larger than a diameter of ocellus; paramere as in figs. 427 & 428 . . . . . *fraterculus* (p. 254)
3. Costa without setigerous puncture . . . . . *nigritus* [part] (p. 257)
- Costa with 1 setigerous puncture . . . . . 4.
4. Paraclypei entirely densely punctured, punctures present also on posterior part of clypeus (figs. 429 & 444); paramere either as in figs. 431-432 or as in figs. 446-447. . 5.
- Paraclypei punctured only laterally (figs. 434, 438), clypeus entirely impunctate; paramere not as above . . . . . 6.
5. Pronotum almost entirely densely punctured, calli small (fig. 430); ocelli large, distance between ocelli about 4.6 times larger than the diameter of ocellus; paramere as in figs. 431-432 . . . . . *himalayensis* (p. 255)
- Pronotum posteriorly without punctures, calli large (fig. 445); ocelli small, distance

- between ocelli about 6.9 times larger than the diameter of ocellus; paramere as in figs. 446-447. . . . . ***schaeferi*** (p. 258)
6. Each lateral margin of pronotum with 6-9 submarginal setigerous punctures; paramere as in fig. 439-440 . . . . . ***nigritus*** [part] (p. 257)
- Each lateral margin of pronotum with 10-14 submarginal setigerous punctures; paramere not as above . . . . . 7.
7. Scutellum densely punctured, punctures large (fig. 449); smaller species, body length 7.54-8.65 mm; paramere as in fig. 451 . . . . . ***vollenhoveni*** (p. 259)
- Scutellum sparsely punctured, punctures smaller (fig. 435); larger species, body length 8.55-9.71 mm; paramere not as above . . . . . 8.
8. Paramere with stout hypophysis (figs. 441-442); lateral parts of abdomen conspicuously densely punctured and transversely wrinkled; ocellar index about 4.2; 3rd antennal segment 1.10 times longer than the 2nd; each lateral margin of pronotum with 13-14 submarginal setigerous punctures . . . . . ***obscurus*** (p. 258)
- Paramere with slender hypophysis (figs. 436-437); lateral parts of abdomen conspicuously transversely wrinkled, and only weakly punctured; ocellar index about 4.3-6.3; 3rd antennal segment about 1.20-1.30 times longer than the 2nd; each lateral margin of pronotum with 10-13 submarginal setigerous punctures . . . . . ***kinabalensis*** (p. 256)

***Pseudoscoparipes (Aethiellus) birmanus*, new species**

(figs. 424-426)

*Lactistes truncato-serratus*, not of SIGNORET: DISTANT, 1901a: 101 [part].

DIAGNOSIS. - This species differs from all within the subgenus (except *fraterculus*) in the presence of 2-5 setigerous punctures on the costa; it can be easily separated from *P. (A.) fraterculus* by the smaller ocelli (ocellar index: 5.0-6.0 in *birmanus*, 3.0 in *fraterculus*).

DESCRIPTION. - Body castaneous, blackish brown or black.

Head distinctly more or less punctured, with exception of vertex and clypeus; the latter as long as or slightly shorter than paraclypei, subapically with two peg-like setae; each paraclypeus with 9-11 submarginal setigerous punctures (6-7 peg-like setae and 2-4 hair-like setae); eyes brown or reddish brown, ocular index 2.50-3.70 (2.50-3.46 in male, 2.70-3.70 in female); ocelli yellowish brown or reddish, interocellar index 3.0-5.0; antennae brown or pale brown, 3rd segment about 1.3-1.7 times longer than the 2nd; rostrum brown, reaching middle coxae.

Pronotum distinctly punctured except calli and posterior fourth; each lateral margin submarginally with a row of 12-16 setigerous punctures.

Scutellum almost evenly punctured, with exception of basal part and apex; punctures of the same size as those on pronotum.

Corium of the same colour as pronotum and scutellum; clavus with one complete and two partial rows of punctures; mesocorium evenly densely punctured, two rows of punctures parallel clavo-corial suture; exocorium densely punctured; all punctures smaller than those on pronotum and scutellum; costa with 2-7 setigerous punctures; membrane brown, semihyaline, distinctly surpassing the tip of abdomen.

Propleuron polished, depression with a few punctures; evaporatoria typical of the genus.

Sternites dark castaneous or brownish black, glossy in the middle, lateral two thirds distinctly punctured and slightly wrinkled.

Legs dark brown with black spines, not specifically modified.

Paramere as in figs. 424-425, penis as in fig. 426.

Measurements (male and female respectively): body length 7.85-8.00, 7.75-8.20; body width 4.45-4.70, 4.45-4.80; head length 1.22-1.26, 1.24-1.26; head width 1.82-1.90, 1.87-1.89; pronotum length 2.49-2.90, 2.39-2.61; pronotum width 4.05-4.50, 4.07-4.26; scutellum length 2.61-3.05, 2.93-3.02; scutellum width 2.58-2.85, 2.56-2.73; antennal segments: 0.33-0.40 : 0.32-0.38 : 0.55-0.55 : 0.49-0.60 : 0.51-0.62, 0.30-0.34 : 0.35-0.36 : 0.45-0.55 : 0.48-0.49 : 0.52-0.60.

#### TYPE MATERIAL EXAMINED

Holotype male: [BURMA]: Tenasserim, Thagatá, FEA Apr. 1887, Museo Civico di Genova; *Lactistes truncatoserratus* SIGN., DISTANT det. (MCSN).

Paratypes: 1 male: [BURMA]: Teinzo, Birmania, FEA Maggio 1886, Museo Civico di Genova; *Lactistes truncatoserratus* SIGN., DISTANT det. (JAL); 1 male: [VIETNAM]: Tonkin, Reg. de Hoa-Binh, A. de COOMAN 1928, Muséum Paris (MNHN); 1 female: [BURMA]: Carin, Chebá, 400-1100m, L. FEA V-88, Museo Civico di Genova; *Lactistes truncatoserratus* SIGN., DISTANT det. (MCSN); 1 female: [VIETNAM]: Tonkin, Hoa Binh (J. DE COOMAN), R. OBERTHUR 1919, *Cydnius indicus* WESTW., We-I YANG det. 1935, Muséum Paris (MNHN); 1 female: [PHILIPPINES]: Philippines, Luan, ca. 50m, South Cotabato, Mindanao Is., 13.VIII.1985, Y. NISHIKAWA (NSMT).

DISTRIBUTION. - Burma, Vietnam, Philippines.

REMARK. - The three specimens from Burma (wrongly identified by DISTANT, 1901a as *Lactistes truncatoserratus*) represent also the new species, and have been included into the type material.

### ***Pseudoscoparipes (Aethiellus) fraterculus*, new species**

(figs. 427-428)

DIAGNOSIS. - This species differs from others within the subgenus in the presence of 2 setigerous punctures the costa (one or none is present in the other species, only *P. birmanus* has 2-7 setigerous punctures). The new species can be easily separated from the latter one by the larger ocelli, and the shape of the paramere.

DESCRIPTION. - Body dark castaneous.

Head densely punctured, except anterior part of clypeus and vertex; clypeus as long as paraclypei, subapically with two peg-like setae; each paraclypeus with a row of 10 submarginal setigerous punctures bearing peg-like and hair-like setae; eyes reddish brown, ocular index 2.67; ocelli yellowish brown, interocellar index 3.9, ocellar index 3.0; antennae pale brown, 3rd segment longer than the 2nd; rostrum brown, reaching middle coxae.

Pronotum distinctly punctured, punctures blackish brown, slightly larger than those on head; calli and posterior margin impunctate; each lateral margin with a row of 13-14 submarginal setigerous punctures.

Scutellum densely, almost evenly punctured, punctures blackish brown, slightly larger than those on pronotum; anterolateral angles and apex impunctate.

Corium with punctures distinctly smaller than those on pronotum and scutellum; clavus with one complete and two partial rows of punctures; mesocorium with two rows of punctures paralleling clavo-corial suture, mesocorial disc almost evenly punctured; exocorium densely punctured; costa with two setigerous, and numerous small non-setigerous punctures; membrane brown, semihyaline, surpassing the tip of abdomen.

Propleural depression with a few punctures close to coxae; evaporatoria typical of the genus. Sternites densely punctured in lateral two thirds.

Legs not specifically modified.

Paramere as in figs. 427-428, penis similar to that of *P. birmanus*.

Measurements (male only): body length 8.53; body width 4.71; head length 1.32; head width 1.96; pronotum length 2.79; pronotum width 4.51; scutellum length 2.99; scutellum width 2.89; antennal segments: 0.43 : 0.37 : 0.54 : 4th and 5th missing.

#### TYPE MATERIAL EXAMINED

Holotype male: [VIETNAM]: Museum Leiden, E. le MOULT (Vitalis), Thade Par Cuaras, Prov. De Vins, Annam, 400m, Maart-April 1913 (RNH).

DISTRIBUTION. - Vietnam.

### ***Pseudoscoparipes (Aethiellus) himalayensis*, new species**

(figs. 429-433)

DIAGNOSIS. - Among the species with the single setigerous puncture on the costa this one can be recognized by the pronotum (except small calli) and the paraclypei entirely densely punctured, by the large ocelli, and by the paramere as in figs. 431-432.

DESCRIPTION. - Head black, lateral margins brownish black, paraclypei entirely densely punctured, punctures present also on the posterior part of clypeus (fig. 429); the latter as long as paraclypei, and subapically with two peg-like setae; each paraclypeus submarginally with 10-11 setigerous punctures (6 peg-like setae and 4-5 hair-like setae); eyes dark brown, ocular index 4.0; ocelli reddish brown, interocellar index 3.14, ocellar index 4.6; antennae brown, each segment darker basally than apically, 2nd segment shorter than the 3rd; rostrum dark brown, reaching middle coxae.

Pronotum black, lateral margins brownish black; disc densely entirely punctured, except small calli and tips of posterolateral angles (fig. 429); all punctures larger than those on head; each lateral margin with 11-12 submarginal setigerous punctures.

Scutellum black, entirely densely punctured except anterolateral angles and apex, punctures of the same size as those on pronotum.

Corium dark castaneous; clavus with 3-4 rows of punctures; mesocorium evenly punctured, two rows of punctures parallel clavo-corial suture; exocorium evenly punctured; punctures somewhat smaller than those on scutellum and pronotum; costa with numerous fine punctures, but only with one true setigerous puncture; membrane browned, narrower than abdomen, and not reaching its tip.

Propleuron blackish brown, polished, depression with a few punctures close to anterior coxae; evaporatoria as in *P. (A.) vollenhoveni*.

Sternites blackish brown, glossy in the middle, sides distinctly coarsely punctured, and with short hair-like bristles. Legs dark brown, not specifically modified.

Paramere somewhat similar to that of *P. (A.) birmanus*, but differs in the shape of apical part of blade inner process (figs. 431-432); penis as in fig. 433.

Measurements (male only): body length 7.65; body width 4.39; head length 1.08; head width 1.83; pronotum length 2.49; pronotum width 4.10; scutellum length 2.93; scutellum width 2.71; antennal segments: 0.45 : 0.38 : 0.48 : 0.57 : 0.64.

## TYPE MATERIAL EXAMINED

Holotype male: [INDIA]: Ind. Mus., Ghumti, Darjiling dist., Alt. 1800ft, E. Himalayas, 27.III.-10, F. GRAVELY; DISTANT Coll. B.M. 1911-383 (BMNH).

DISTRIBUTION. - India.

***Pseudoscoparipes (Aethiellus) kinabalensis*, new species**

(figs. 434-437)

DIAGNOSIS. - The species is best diagnosed by the set of following characters: the costa with 1 setigerous puncture; the paraclypei punctured only laterally (fig. ); the ocellar index about 4.3-6.3; the 3rd antennal segment about 1.2-1.3 times longer than the 2nd; each lateral margin of the pronotum with 10-13 submarginal setigerous punctures; the scutellum and lateral parts of abdomen weakly punctured; the body large (8.55-9.41 mm in length), and the paramere as in figs. 436-437.

DESCRIPTION. - Body black, sometimes corium more castaneous.

Head dorsally punctured only in lateral parts (fig. 435), sometimes also finely wrinkled; clypeus almost as long as paraclypei, subapically with two peg-like setae; each paraclypeus with a row of 12-13 submarginal setigerous punctures (9-10 peg-like setae and 3-4 hair-like setae); eyes reddish brown, ocular index 3.42-4.58 (4.36 in female, 3.42-4.58 in male); ocelli reddish brown, interocellar index 2.1-2.8, ocellar index 4.3-6.3; antennae brown, 2nd segment shorter than the 3rd; rostrum dark brown, reaching middle coxae.

Pronotum more or less punctured (fig. 435); all punctures slightly larger than those on head; each lateral margin with 10-13 submarginal setigerous punctures. Scutellum moderately punctured, punctures in the middle part larger than those on pronotum, apex finely punctured.

Corium almost evenly punctured; clavus with one complete and three partial rows of punctures; mesocorial disc finely punctured, two rows of large punctures parallel clavo-corial suture; exocorium with puncturation denser than that of mesocorium; costa with few scattered tiny punctures, and one large setigerous puncture; membrane brown, broader than abdomen, surpassing its tip.

Propleuron polished, depression with a few punctures; evaporatoria as in *P. (A.) vollenhoveni*, but posterior area on metapleuron weakly punctured.

Sternites black, lateral parts distinctly wrinkled and punctured.

Legs not specifically modified.

Paramere as in figs. 436-437; penis similar to that of *P. (A.) schaeferi*.

Measurements (male and female respectively): body length 8.55-9.12, 9.41; body width 4.80-4.85, 5.15; head length 1.34-1.37, 1.47; head width 1.94-2.16, 2.01; pronotum length 2.75-3.14, 2.94; pronotum width 4.55- 4.66, 4.90; scutellum length 3.22-3.38, 3.38; scutellum width 2.95-3.09, 2.99; antennal segments: 0.43-0.49 : 0.47-0.49 : 0.53-0.62 : 0.63-0.74 : 0.77-0.86, 0.47 : 0.49 : 0.57 : 0.71 : 5th missing.

## TYPE MATERIAL EXAMINED

Holotype male: [MALAYSIA]: Sabah, Mt. Kinabalu, Mesilau, 3.II.1964, J. SMART., Royal Soc. Exped., B.M. 1964-250 (BMNH).

Paratypes: 1 male: [MALAYSIA]: Borneo, E. Malaysia, 10 mi NW of Keningau, alt. 900m, Sabah, 8 VI.1980, Shinji NAGAI leg. (NSMT); 1 male 1 female: [MALAYSIA]: RMNH/sa45, Sabah, Crocker Range, Keningau-Kimanis rd (km 25), alt. m 1300, 18-23/xi/1987, KRIKKEN & ROMBAUT, multistr evergr forest, 8 human excr traps (RNH, JAL).



DISTRIBUTION. - Borneo (Sabah).

BIOLOGICAL DATA. - Two specimens have been labelled as collected in the "human excr traps" in a tropical evergreen forest.

***Pseudoscoparipes (Aethiellus) nigrinus*, new species**

(figs. 438-440)

DIAGNOSIS. - This species can be easily separated from any other within the subgenus by the absence of setigerous punctures on the costa; if (only occasionally) the setigerous puncture is present, then the species can be distinguished by the head punctured only in the lateral parts of paraclypei, and the presence of 6-9 submarginal setigerous punctures on each lateral margins of the pronotum.

DESCRIPTION. - Body black, margins sometimes castaneous, dorsal surface generally weakly punctured.

Head with clypeus impunctate (fig. 438), as long as or slightly shorter than paraclypei, subapically with two peg-like setae; each paraclypeus punctured laterally, submargins with 10-12 setigerous punctures (7-10 peg-like setae and 2-3 hair-like setae); eyes reddish brown or brown, ocular index 3.70-4.17 (3.70-4.13 in male, 3.86-4.17 in female); ocelli reddish brown or yellowish brown, interocellar index 2.1-2.6, ocellar index 4.4-5.6; antennae brown, 2nd segment shorter than the 3rd; rostrum brown, reaching middle coxae.

Pronotal disc weakly punctured; posterior part impunctate except for postmedian more or less broad band of punctures, which are slightly smaller than those on head; each lateral margin with 6-9 submarginal setigerous punctures.

Scutellum weakly punctured, punctures slightly smaller than those on pronotum, puncturation of disc more sparse in female than in male.

Corium punctured slightly denser and more distinct than pronotum and scutellum; clavus with one complete and one or two partial rows of punctures; mesocorial disc punctured with tiny punctures, two distinct rows of punctures parallel clavo-corial suture; exocorium sparsely punctured; puncturation of corium more distinct in female than in male; costa without or occasionally with one setigerous puncture; membrane brown, reaching or surpassing the tip of abdomen.

Propleuron polished, slightly alutaceous, depression with a few punctures, anteriorly with hairs; evaporatoria as in *P. (A.) vollenhoveni*.

Sternites glossy in the middle, laterally distinctly wrinkled and with scattered distinct punctures. Legs not specifically modified.

Penis similar to that of *P. (A.) schaeferi*, paramere as in figs. 439-440.

Measurements (male and female respectively): body length 7.50-9.05, 7.75-8.15; body width 3.87-5.30, 4.04-4.85; head length 1.08-1.40, 1.03-1.37; head width 1.81-2.12, 1.86-2.03; pronotum length 2.30-3.20, 2.50-2.95; pronotum width 3.72-4.95, 3.92-4.68; scutellum length 2.69-3.54, 2.94-3.34; scutellum width 2.50-3.12, 2.65-2.95; antennal segments: 0.41-0.60 : 0.45-0.55 : 0.55-0.61 : 0.80-0.81 : 0.82-0.84, 0.40-0.44 : 0.38-0.52 : 0.43-0.57 : 0.58-0.61 : 0.61-0.68.

TYPE MATERIAL EXAMINED

Holotype male: [SINGAPORE]: Singapore, DISTANT Coll., 1911-383 (BMNH).

Paratypes: 1 female: [INDONESIA]: Sumatra, Benkoelen, Lebong Tandai, 1920-23, C. J. BROOKS; Brit. Mus. 1926-12 (JAL); 4 males 6 females: [INDONESIA]: Fort de Kock (Sumatra), 920M, December 1921, leg. E. JACOBSON (RNH, JAL); 1 female: [INDONESIA]: Gunning Singgalang, Sumatra's Westkust, 1800M,

1925, leg. E. JACOBSON (RNH); 1 female: [MALAYSIA]: Mus. Leiden, E. le MOULT, Kinabaloë Berg, Borneo (RNH).

DISTRIBUTION. - Singapore, Sumatra, Borneo.

***Pseudoscoparipes (Aethiellus) obscurus*, new species**

(figs. 441-443)

DIAGNOSIS. - Since the species is described on the basis of a single male, the shape of the male genitalia appears to be the best character separating it from the others within the subgenus. Additionally, this new species can be diagnosed by the densely punctured lateral parts of the abdomen, the weakly punctured scutellum, the ocellar index about 4.2, the 3rd antennal segment only 1.1 times longer than the 2nd, each lateral margin of the pronotum with 13-14 submarginal setigerous punctures, and the large body (9.71 mm in length).

DESCRIPTION. - Body black. Head punctured only in lateral parts, clypeus and vertex impunctate; clypeus as long as paraclypei, almost parallel-sided, submarginally with two peg-like setae; each paraclypeus with a row of 13 submarginal setigerous punctures (11 peg-like setae, 2 hair-like setae); eyes reddish brown, ocular index 3.41; ocelli yellowish brown, interocellar index 2.78, ocellar index 4.2; antennae brown, 3rd segment slightly longer than the 2nd; rostrum brown, reaching anterior margin of middle coxae.

Pronotum with puncturation similar to that of *P. (A.) kinabalensis*, but punctures slightly smaller; each lateral margin with a row of 13-14 submarginal setigerous punctures.

Scutellum sparsely punctured, punctures both larger and distinctly smaller than those on pronotum; anterolateral angles impunctate.

Corium with small punctures; puncturation pattern as in *P. (A.) kinabalensis*, but punctures distinctly smaller than those of the latter; costa with 1 setigerous puncture; membrane brown, broader than abdomen and surpassing its tip.

Propleuron alutaceous, depression with several large punctures; evaporatoria typical of the genus. Sternites punctured and transversely wrinkled in lateral two thirds. Legs not specifically modified.

Penis with long ductus seminis (fig. 443); paramere as in figs. 441-442.

Measurements (male only): body length 9.71; body width 5.10; head length 1.18; head width 2.11; pronotum length 3.04; pronotum width 4.85; scutellum length 3.43; scutellum width 3.18; antennal segments: 0.47 : 0.49 : 0.54 : 0.68 : 0.74.

TYPE MATERIAL EXAMINED

Holotype male: [MALAYSIA]: Borneo, Sabah, Sook, Keningau, 4.IV.1982, Shinji NAGAI (NSMT).

DISTRIBUTION. - Borneo.

***Pseudoscoparipes (Aethiellus) schaeferi*, new species**

(figs. 444-448)

DIAGNOSIS. - The species is best diagnosed by the set of following characters: the costa with 1 setigerous puncture; the paraclypei entirely densely punctured; the posterior part of the clypeus punctured (fig. 444); the pronotum posteriorly without punctures, the calli large (fig. 445); the ocelli small, ocellar index about 6.9. This species is closely related to *P. (A.) himalayensis*; since both species are described

on the basis of a single male specimen, the shape of the paramere seems to be the best character for their separation.

**DESCRIPTION.** - Head black, paraclypei entirely distinctly punctured (fig. 444); clypeus as long as paraclypei, posteriorly punctured, subapically with two peg-like setae; each paraclypeus submarginally with 13 setigerous punctures (8 peg-like setae and 5 hair-like setae); eyes yellowish brown, ocular index 4.58; ocelli small, yellowish brown, interocellar index 2.2, ocellar index 6.9; antennae brown, 2nd segment shorter than the 3rd; rostrum brown, reaching anterior margin of middle coxae.

Pronotum black, puncturation of disc as in fig. 445; each lateral margin with 10-11 submarginal setigerous punctures.

Scutellum black, apex brownish black; disc weakly punctured, with almost all punctures grouped in the middle.

Corium black in basal part, dark castaneous near membrane; clavus with one complete and two partial rows of punctures; mesocorium evenly punctured with punctures smaller than those on pronotum, two rows of punctures parallel clavo-corial suture; exocorium weakly punctured; costa punctured with tiny non-setigerous, and one large setigerous puncture; membrane brown reaching the tip of abdomen.

Propleuron blackish brown, depression with a few large punctures; evaporatoria as in *P. (A.) vollenhoveni*.

Sternites black, sides distinctly grooved and wrinkled, middle third reticulated and finely punctured, lateral margins with numerous short hair-like bristles.

Legs dark castaneous, almost black, not specifically modified.

Penis as in fig. 448; paramere as in figs. 446-447.

Measurements (male only): body length 8.40; body width 4.75; head length 1.25; head width 1.96; pronotum length 2.85; pronotum width 4.55; scutellum length 3.29; scutellum width 2.90; antennal segments: 0.49 : 0.28 : 0.42 : 4th and 5th missing.

#### TYPE MATERIAL EXAMINED

Holotype male: [MALAYSIA]: Maxwell's Hill, Perak, 4708, 16 Aug. 1908; Ex F.M.S. Museum, B.M. 1955-354 (BMNH).

**DISTRIBUTION.** - Malaya.

**ETYMOLOGY.** - The species is named after Prof. Carl W. SCHAEFER, an eminent American heteropterist.

### ***Pseudoscoparipes (Aethiellus) vollenhoveni* (SIGNORET), new combination** (figs. 449-451)

*Cydnius Vollenhoveni* SIGNORET, 1881a: 630.

*Aethus Vollenhoveni* SIGNORET, 1882d: 29; LETHIERRY & SEVERIN, 1893: 68 [name preoccupied by *Cydnius vollenhoveni* SIGNORET, 1881].

*Aethus vollenhoveni*: LIS, 1991b: 180.

*Aethus snelleni* LIS, 1991b: 177 [as a new name for *Aethus vollenhoveni* SIGNORET, 1882], new synonym.

**DIAGNOSIS.** - Among the species with the single setigerous puncture on the costa this one can be recognized by the set of following characters: the paraclypei punctured only laterally; each lateral margin of the pronotum with 10-13 submarginal setigerous punctures; the scutellum densely punctured with large

punctures; the body length from 7.45 to 8.65 mm; the paramere as in fig. 451.

DESCRIPTION. - Body dark castaneous, blackish brown or black.

Head dorsally almost impunctate, only few punctures present close to eyes; clypeus as long as paraclypei, subapically with two peg-like setae; each paraclypeus with a row of 9-11 submarginal setigerous punctures (7-8 peg-like setae and 2-3 hair-like setae); eyes brown or reddish brown, ocular index 2.81-3.80; ocelli reddish brown, interocellar index 2.2-3.5, ocellar index 3.4-4.9; antennae brown, 2nd segment shorter than the 3rd; rostrum brown, reaching middle coxae.

Pronotum punctured, postmedian band of punctures more or less broad; each lateral margin with 10-13 setigerous punctures submarginally.

Scutellum punctured, except basal part and apex (fig. 449); punctures larger than those on pronotum.

Corium with punctures smaller than those on scutellum; clavus with one complete and two partial rows of punctures; mesocorium evenly punctured with small punctures; exocorium evenly punctured, basally with large punctures, apically with smaller ones; costa with 1 setigerous puncture; membrane brown or reddish brown, surpassing the tip of abdomen.

Propleuron brownish black, depression with a few punctures; apex of peritreme as in fig. 450. Sternites laterally wrinkled and finely sparsely punctured.

Legs not specifically modified. Paramere as in fig. 451.

Measurements (male and female respectively): body length 7.95-8.00, 7.54-8.65; body width 4.50-4.53, 4.21-5.10; head length 1.19-1.40, 1.10-1.34; head width 1.89-1.90, 1.76-1.92; pronotum length 2.54-2.70, 2.52-2.80; pronotum width 4.17-4.31, 3.81-4.65; scutellum length 3.03-3.05, 2.77-3.19; scutellum width 2.71-2.90, 2.57-2.90; antennal segments: 0.42-0.49 : 0.46-0.47 : 0.49-0.50 : 0.63-0.64 : 0.64-0.66, 0.40-0.46 : 0.40-0.49 : 0.45-0.54 : 0.56-0.68 : 0.62-0.68.

#### TYPE MATERIAL EXAMINED

Lectotype female of *Cydnus vollenhoveni* SIGNORET (designated by LIS, 1991b: 180): [INDONESIA]: Sumatra, M Singalang, Luglio 1878, O. BECCARI; Typus; *Cydnus Vollenhoveni* n. sp.; *Vollenhoveni* SIGN.; Museo Civico di Genova (MCSN).

Lectotype female of *Aethus vollenhoveni* SIGNORET (designated by LIS, 1991b: 177): [INDONESIA]: Java, K. and v. H.; No 7; cotypus; *Aethus Vollenhoveni* SIGNORET; *Cydnus vollenhoveni* SIGN. (RNH).

#### OTHER MATERIAL EXAMINED (3 males, 9 females)

MALAYSIA: Malay Penin., Selangor, Bukit Kutu, 3500ft, 1 female April 17th 1926, H.M. PENDELBURY, ex coll. F.M.S. Museum (BMNH); Perak, Doherty, 1 female, DISTANT coll., 1911-383 (BMNH); Malaya, Pahang N.R. Karak, Chintamani, 1 female Aug. 21st 1935, Jungle, Selangor Museum Collectors (BMNH); Pahang, F.M.S., Cameron Highlands, Tanah Rota, 4800ft, 1 female 24.7.1938, at light, H.M. PENDELBURY Coll., F.M.S. Museum, Ex F.M.S. Museum, B.M. 1955-354 (JAL); Sarawak, Bau, 1 male 6.VIII.1909, C.J. BROOKS, B.M. 1936-681 (JAL).

INDONESIA: Sumatra, Palembang, 1 male, M. KNAPPERT, coll. Dr. D. Mac GILLAVRY (ZMA); Java, VOLL., 1 female, 106, 403, det. as *Cydnus vollenhoveni* SIGN. by MAYR, Coll. Nat. Mus. Wien (NhMW); Bindjey-Estate, Deli, Ost Sumatra, W. BURCHARD leg., 1 female ded. 28.IV.1894 (JAL); Tandjong Morawa, Serdang, N.O. Sumatra, 1 female, Dr. B. HAGEN (RNH); Fort de Kock (Sumatra), 920M, 1 female December 1921, leg. E. JACOBSON (RNH); West Java, 1 male 1919, W.C.V. HEURN, coll. Dr. D. Mac GILLAVRY (ZMA); Java, 1 female, HORSFIELD, 60-15, E.I.C (BMNH).

DISTRIBUTION. - Malaya, Sumatra, Java, Borneo (Sarawak).

BIOLOGICAL DATA. - One examined specimen bears the label "Jungle".

REMARKS. - The differences between the type specimen of *Aethus vollenhoveni* SIGN. (from Java), and the type specimen of *Cydnus vollenhoveni* SIGN. (from Sumatra) have forced me a few years ago (LIS, 1991b) to treat these specimens as

belonging to two separate species. I proposed the new name (*A. snelleni*) for the former, since both species belonged to the same genus. At present, when more specimens have been available to the study it has turned out that those dissimilarities represented only a morphological variability of the one species.

### Genus *Scoparipes* SIGNORET

*Scoparipes* SIGNORET, 1880: CLXXIII.

**DIAGNOSIS.** - The distinctly flattened and broadened posterior tibiae bearing a row of short, very close, stiff hairs on the dorsal surface in male, and the osteolar opening surrounded by a hood-like auricle with a broad polished band posteriorly will separate this genus from all other genera of the tribe.

**DESCRIPTION.** - Body large, usually exceeding 10.0 mm.

Head broader than long, with distinct marginal carina; margins rounded (sg. *Euscoparipes*) or bilobed (*Scoparipes* s. str.); paraclypei almost equal to (sg. *Euscoparipes*) or longer than clypeus (*Scoparipes* s. str.); clypeus with two subapical peg-like setae; each paraclypeus with a row of numerous submarginal peg-like setae; eyes not protruding (*Scoparipes* s. str.) or protruding (sg. *Euscoparipes*) beyond lateral margins of head; ocelli distinctly developed; antennae 5-segmented; rostrum varying in length.

Pronotum broader than long, narrowed from base; lateral margins carinate, with numerous submarginal setigerous punctures; anterior margin sinuated, the posterior broadly rounded; postmedian transverse impression varying from distinct to almost invisible, usually marked with a row or band of coarse punctures; males of some species with broad, shallow, median subapical impression.

Scutellum longer than broad, apex rounded, disc with irregularly scattered both fine and coarse punctures; basal and lateral rows of punctures conspicuously developed.

Corium longer than scutellum, polished, more or less punctured throughout, divided into clavus, meso- and exocorium; mesocorium with two rows of punctures paralleling clavo-corial suture, mesocorial disc usually evenly punctured; costal margin with 3-20 setigerous punctures.

Propleural depression deep; evaporatoria on meso- and metapleuron large, conspicuous; apex of peritreme modified into a broad lobe, with the opening surrounded by a hood-like auricle, posteriorly with broad polished band (figs. 454, 474, 484).

Anterior tibiae (fig. 465) compressed, outer margin with 8-12 stout, blunt spines; middle tibiae stout, somewhat compressed, margins with long spines; posterior tibiae distinctly flattened and broadened, spines restricted to margins, dorsal surface with a row of short, very close, stiff hairs in male specimens (fig. 459), the same row with a few hairs in female specimens (fig. 466); posterior tibiae 4.0-8.6 times longer than broad.

Male genitalia of the geotomine type; penis stout, strongly sclerified; paramere with modified hypophysis.

**TYPE OF GENUS.** - *Cydnius latipes* WESTWOOD, 1837, by original designation, as confirmed by ICZN (OPINION 1707, 1993) - see also LIS, 1991d.

Key to subgenera of *Scoparipes*

1. Head bilobed, paraclypei longer than clypeus; eyes not protruding beyond lateral margins of head (figs. 452, 458, 462, 468) . . . . . ***Scoparipes*** (p. 262)
- Head semicircular, paraclypei equal to or almost equal to clypeus; eyes protruding beyond lateral margins of head (figs. 473, 478, 483, 488, 493, 500) . . . . . ***Euscoparipes*** (p. 266)

Subgenus *Scoparipes* s. str.

DIAGNOSTIC CHARACTERS. - Head bilobed, paraclypei longer than clypeus, eyes not protruding beyond lateral margins of head; posterior tibiae 4.0-5.9 times longer than broad.

TYPE OF SUBGENUS. - *Cydnus latipes* WESTWOOD, 1837.

Key to species of *Scoparipes* s. str.

1. Female . . . . . 2.
- Male . . . . . 5.
2. Costa with 13-16 setigerous punctures; each lateral margin of pronotum with more than 40 submarginal setigerous punctures . . . . . ***rufipes*** (p. 265)
- Costa with 6-9 setigerous punctures; each lateral margin of pronotum with less than 40 submarginal setigerous punctures . . . . . 3.
3. Each lateral margin of pronotum with 17-19 setigerous punctures . . . . . ***conviva*** (p. 262)
- Each lateral margin of pronotum with 22-37 setigerous punctures . . . . . 4.
4. Body length about 13 mm (12.9-13.6), posterior tibiae 5.05-5.86 times longer than broad . . . . . ***dissimilis*** (p. 263)
- Body length about 12 mm (11.63), posterior tibiae 4.0 times longer than broad. . . . . ***latipes*** (p. 264)
5. Paramere as in fig. 455; body length about 12 mm . . . . . ***conviva*** (p. 262)
- Paramere as in fig. 460; body length about 14 mm . . . . . ***dissimilis*** (p. 263)

***Scoparipes (Scoparipes) conviva* HORVÁTH**

(figs. 452-456)

*Scoparipes latipes*, not of WESTWOOD: SIGNORET, 1880: CLXXIII.

*Scoparipes latipes*, not of SIGNORET: SIGNORET, 1881e: 203 [part].

*Scoparipes conviva* HORVÁTH, 1919: 233.

*Scoparipes (Scoparipes) conviva*: LIS, 1990a: 163.

DIAGNOSIS. - Females of this species can be recognized within the subgenus by the presence of less than 10 setigerous punctures on the costa, and 17-19 submarginal setigerous punctures on the lateral margins of the pronotum; males can be best diagnosed by the shape of genitalia.

DESCRIPTION. - Head bilobed (fig. 452), brownish black or black, lateral parts brown, dorsal surface punctured; clypeus tapering apicad; each paraclypeus with 14-15 submarginal peg-like setae; eyes reddish brown or yellowish brown; ocular



index 3.3 (in female), and 4.0 (in male); ocelli reddish brown or yellowish brown, interocellar index 2.0-2.3; antennae brown, 1st segment not reaching apex of head; rostrum brown, reaching middle of mesosternum, 1st segment surpassing posterior margin of head, 3rd longer than 4th.

Pronotum brownish black; each lateral margin with 17-19 (in female), or 21-26 (in male) submarginal setigerous punctures; puncturation of disc as in fig. 453.

Scutellum of the same colour as pronotum; disc evenly punctured, except for apex.

Corium chocolate brown or blackish brown, claval suture brownish black, sometimes clavus entirely brown; costal margin with 6-7 (in female), or 5-6 (in male) setigerous punctures; membrane brown, reaching or slightly surpassing the posterior extremity of abdomen.

Propleural depression with a few punctures; apex of peritreme as in fig. 454.

Sternites chocolate brown, segmental sutures blackish brown, spiracles black; segments glossy in the middle, sides striated and punctured.

Anterior tibiae with 9 stout blunt spines on outer margin; posterior tibiae about 5.29-5.30 times longer than broad.

Paramere as in fig. 455; penis with stout and long ductus seminis, extending far beyond theca (fig. 456).

Measurements (male and female respectively): body length 11.53, 12.24; body width 6.37, 6.67; head length 1.54, 1.56; head width 2.32, 2.44; pronotum length 4.13, 4.23; pronotum width 5.80, 6.25; scutellum length 4.38; scutellum width 3.84; antennal segments (male only): 0.54 : 0.34 : 0.54 : 0.51 : 0.66.

#### TYPE MATERIAL EXAMINED

Lectotype female of *Scoparipes conviva* HORVÁTH (designated by LIS, 1990a: 165): [INDONESIA]: Borneo, XANTUS; *conviva* det. HORVÁTH; *Scoparipes conviva*; Typus; coll. Mus. Nat. Hung., Lectotype, det. J.A. LIS (HNHM).

#### OTHER MATERIAL EXAMINED (1 male)

INDONESIA: Borneo, 1 male, DISTANT coll., 1911-93, det. as *Scoparipes latipes* SIGN. (BMNH).

DISTRIBUTION. - Borneo.

### ***Scoparipes (Scoparipes) dissimilis* HORVÁTH**

(figs. 457-461)

*Scoparipes latipes* SIGNORET, 1881e: 203; DISTANT, 1899a: 219; LETHIERRY & SEVERIN, 1893: 63 [part]; BREDDIN, 1900: 287 [name preoccupied by *Scoparipes latipes* (WESTWOOD, 1837)].

*Scoparipes dissimilis* HORVÁTH, 1919: 17.

*Scoparipes (Scoparipes) dissimilis*: LIS, 1990a: 165.

DIAGNOSIS. - Males of this species are best diagnosed by the shape of paramere, females by the presence of less than 10 setigerous punctures on the costa combined with 22-36 setigerous punctures on each lateral pronotal margin.

DESCRIPTION. - Head (fig. 458) bilobed, brownish black, lateral parts brown; dorsal surface distinctly striated and finely punctured; paraclypei longer than clypeus, each paraclypeus with 13-15 submarginal peg-like setae; eyes dark reddish brown or red, ocular index 3.3-3.6 (in female) or 3.7-4.1 (in male); ocelli yellowish brown or reddish brown, interocellar index 2.3-2.7 (in female) or 2.1-2.4 (in male); antennae brown; rostrum brown, reaching middle of mesosternum, 1st segment surpassing posterior margin of head.

Pronotum black or blackish brown, posterior half sometimes paler; each lateral

margin with 22-36 (in female) or 15-19 (in male) submarginal setigerous punctures; puncturation of disc as in fig. 457.

Scutellum of the same colour as pronotum, disc with scattered punctures larger than those on corium.

Corium brownish black or black, costal margin with 8-9 (in female) or 3-5 (in male) setigerous punctures; membrane brown, almost reaching the tip of abdomen.

Sternites blackish brown or black; glossy in the middle, sides finely striated.

Propleuron finely punctured, and with not numerous short brown hairs.

Anterior tibiae with 10-11 stout blunt spines on outer margin; posterior tibiae about 5.0-6.0 times longer than broad (fig. 459).

Paramere as in fig. 460; penis with stout and long ductus seminis (fig. 461).

Measurements (male and female respectively): body length 13.75-13.85, 12.94-13.55; body width 7.72-7.99, 7.58-7.68; head length 1.85-2.32, 1.63-1.95; head width 2.93-3.09, 2.52-2.56; pronotum length 4.82-4.92, 4.23-4.43; pronotum width 7.03-7.43, 6.93-6.98; scutellum length 5.26-5.66, 5.36-5.41; scutellum width 4.82-5.11, 4.67-4.75; antennal segments 0.63-0.76 : 0.70-0.73 : 0.61-0.66 : 0.73 : 0.71; 0.58-0.63 : 0.61-0.70 : 0.61-0.73 : 0.68 : 5th missing.

#### TYPE MATERIAL EXAMINED

Lectotype male of *Scoparipes dissimilis* HORVÁTH (designated by LIS, 1990a: 167): [INDONESIA]: Sumatra, Medan; *dissimilis* det. HORVÁTH; *Scoparipes dissimilis*; Typus; coll. Mus. Nat. Hung., Lectotype, det. J.A. LIS (HNHM).

#### OTHER MATERIAL EXAMINED (1 male, 3 females)

INDONESIA: Sumatra, Sumatra Exp. 1877-1878, 1 female, Locb.g. 12/77, det. as *Scoparipes dissimilis* HORV., Mus. Leiden (RNH); Sumatra, Palembang, 1 female, K. KNAPPERT, det. as *Scoparipes dissimilis* HORV., Mus. Leiden (RNH); Sumatra, Bankoelen Dist., 1 female, 1912-1919 (JAL).

[?]: Deyr, Unde?, 1 male, *Scoparipes latipes*; cotypus; Museum Leiden, det. as *Scoparipes dissimilis* HORV. (RNH).

DISTRIBUTION. - Sumatra.

### *Scoparipes (Scoparipes) latipes* (WESTWOOD)

(figs. 462-466)

*Cydnius Latipes* WESTWOOD, 1837: 18.

*Cydnius latipes*: STÅL, 1876: 26.

*Scoparipes latipes*: LETHIERRY & SEVERIN, 1893: 63 [part]; DISTANT, 1899a: 219 [part], 1900: 820; HORVÁTH, 1919: 233 [part]; LIS, 1991d: 215.

*Scoparipes (Scoparipes) latipes*: LIS, 1990a: 167.

Misidentifications: SIGNORET, 1880: CLXXIII, 1881d: 44.

DIAGNOSIS. - Females of this species may be recognized by the presence of less than 10 setigerous punctures on the costa and 36-37 submarginal setigerous punctures on each lateral margin of the pronotum, coupled with the posterior tibiae about 4.0 times longer than broad. Males unknown.

DESCRIPTION. - Head (fig. 462) bilobed, blackish brown with sides brown; dorsal surface finely punctured; paraclypei longer than clypeus, each paraclypeus submarginally with 13 peg-like setae; eyes reddish brown, ocular index 3.8; ocelli large, of the same colour as eyes, interocellar index 3.5; antennae short, pale brown, 1st segment not reaching margin of head; rostrum pale brown, reaching middle of mesosternum, 1st segment reaching posterior margin of head.

Pronotum blackish brown, disc punctured as in fig. 464; each lateral margin with 36-37 setigerous punctures.

Scutellum brownish black, disc with punctures smaller than those on pronotum.

Corium generally brownish black, but mesocorium chocolate brown; costal margin with 7-8 setigerous punctures; membrane brown, distinctly surpassing the posterior extremity of abdomen.

Evaporatoria as in fig. 463.

Sternites chocolate brown, segmental sutures blackish brown.

Anterior tibiae compressed (fig. 465), outer margin with 10 stout blunt spines; posterior tibiae broad, 4.0 times longer than broad (fig. 466).

Measurements (female only): body length 11.63; body width 6.57; head length 1.54; head width 2.24; pronotum length 3.93; pronotum width 5.66; scutellum length 4.48; scutellum width 3.88; antennal segments 0.54 : 0.41 : 0.44 : 0.56 : 5th missing.

#### TYPE MATERIAL EXAMINED

Neotype female of *Cydnus latipes* WESTWOOD (designation confirmed by ICZN, OPINION 1707: 74): [INDONESIA]: Java, Type; Type, WESTW. HOPE C. Hemipt. 1837, Part I p. 18, DISTANT P.Z.S. 1900 p 807-825; *Scoparipes latipes* WESTW.; *Stibaropus brunneus* DALL. sec SIGNORET in litt.; Type Hem. No. 63 *Cydnus latipes* WESTWOOD, HOPE Dept., Oxford; Lectotype, det. J.A. LIS (HEC).

DISTRIBUTION. - Java.

### ***Scoparipes (Scoparipes) rufipes* LIS** (figs. 467-469)

*Scoparipes (Scoparipes) rufipes* LIS, 1990a: 169.

DIAGNOSIS. - Females of this species may be recognized within the subgenus by the presence of 13-16 setigerous punctures on the costa, and more than 40 setigerous punctures on each lateral margin of the pronotum. Males unknown.

DESCRIPTION. - Head bilobed (fig. 468), black, sides partly brown; dorsal surface conspicuously punctured and striated; paraclypei longer than clypeus, each paraclypeus submarginally with 14 peg-like setae; eyes reddish brown, ocular index 4.1; ocelli of the same colour as eyes, interocellar index 2.6; antennae brown, each segment basally blackish brown, the 1st not reaching apex of head; rostrum brown, reaching middle of mesosternum, 1st segment extending beyond posterior margin of head.

Pronotum black, posterior parts brownish black, disc punctured as in fig. 467; each lateral margin with 43-45 submarginal setigerous punctures.

Scutellum black, disc distinctly punctured (fig. 467), punctures as large as those on pronotum, but larger than those on corium.

Corium generally blackish brown, but basal part, costal area and claval suture black; each costal margin with 13-16 setigerous punctures; membrane brown, distinctly surpassing the tip of abdomen.

Apex of peritreme as in fig. 469.

Sternites black, glossy in the middle, sides striated and finely punctured; spiracles black.

Legs brownish red, conspicuously paler than remaining parts of body; anterior tibiae compressed, outer margin with 11 blunt stout spines; posterior tibiae 5.8 times longer than broad.

Measurements (female only): body length 14.26; body width 7.89; head length

1.73; head width 2.68; pronotum length 5.07; pronotum width 7.23; scutellum length 5.07; scutellum width 5.02; antennal segments 0.49 : 0.59 : 0.61 : 0.66 : 0.73.

TYPE MATERIAL EXAMINED

Holotype female of *Scoparipes (Scoparipes) rufipes* Lis: [THAILAND]: Peninsular Siam, Nakon Sri Tamarat [=Nakhon Si Thammarat], Khao Luang, 2000 ft., 27 March 1922, H.M. PENDELBURY, *Scoparipes* of not BH., ex F.M.S. Museum, B.M. 1953-354, *Scoparipes* species, FROESCHNER 72; *Scoparipes rufipes* Lis, Holotype, det. J.A. Lis (BMNH).

DISTRIBUTION. - Thailand.

### Subgenus *Euscoparipes* Lis

*Scoparipes* sg. *Euscoparipes* Lis, 1990a: 171.

DIAGNOSTIC CHARACTERS. - Head semicircular, paraclypei equal to or almost equal to clypeus; eyes conspicuously protruding beyond lateral margins of head; posterior tibiae 5.1-8.6 times longer than broad.

TYPE OF SUBGENUS. - *Aethus insignis* WALKER, 1867, by original designation.

#### Key to species of sg. *Euscoparipes*

1. Female ..... 2.
- Male ..... 9.
2. Costa with 4-8 setigerous punctures, each lateral margin of pronotum with 15-27 setigerous punctures ..... 3.
- Costa with 9-20 setigerous punctures, each lateral margin of pronotum with 29-50 setigerous punctures ..... 5.
3. Posterior tibiae 7.3-8.2 times longer than broad, ocular index 2.8-3.6, interocellar index 1.7-2.2 ..... 4.
- Posterior tibiae 5.5-6.3 times longer than broad, ocular index 3.45-4.1, interocellar index 2.5-2.9 ..... *laosanus* (p. 270)
4. Body more elongate, 10.0-12.3 mm in length; each lateral margin of pronotum with 15-24 setigerous punctures ..... *stygius* (p. 275)
- Body more ovate, exceeding 13.0 mm in length; each lateral margin of pronotum with 24-25 setigerous punctures ..... *subitus* (p. 276)
5. Rostrum long, reaching 1st or 2nd abdominal sternit, 4th segment longer than the 3rd ..... *longirostris* (p. 271)
- Rostrum reaching at best posterior coxae, 4th segment not longer than the 3rd ..... 6.
6. Rostrum reaching at best posterior margin of middle coxae; ocular index 2.8-3.3, posterior tibiae either 5.3 or 6.7-8.6 times longer than broad ..... 7.
- Rostrum surpassing middle coxae, sometimes reaching the posterior; ocular index 3.4-4.9, posterior tibiae 5.4-6.3 times longer than broad ..... 8.
7. Costa with 11-18 setigerous punctures; each lateral margin of pronotum with 31-42 setigerous punctures; posterior tibiae 6.7-8.6 times longer than broad ..... *insignis* (p. 268)

- Costa with 9-11 setigerous punctures; each lateral margin of pronotum with 29-30 setigerous punctures; posterior tibiae 5.3 times longer than broad . . . . **salvazai** (p. 274)
- 8. Scutellum weakly punctured, almost smooth (fig. 492); ocular index 3.4-4.0, interocellar index 2.0-2.4; body length exceeding 14.0 mm . . . . . **politus** (p. 272)
- Scutellum densely punctured (fig. 472); ocular index 4.4-4.9, interocellar index 2.8-3.3; body length not exceeding 14.0 mm . . . . . **affinis** (p. 267)
- 9. Smaller species, body length about 9.75 mm . . . . . **minor** (p. 272)
- Larger species, body length exceeding 10.0 mm . . . . . 10.
- 10. Costa with 4-9 setigerous punctures, each lateral margin of pronotum with 15-24 setigerous punctures . . . . . 11.
- Costa with 10-19 setigerous punctures, each lateral margin of pronotum with 27-48 setigerous punctures . . . . . 13.
- 11. Paramere as in fig. 502; costa with 4-7 setigerous punctures, each lateral margin of pronotum with 15-22 setigerous punctures . . . . . **stygius** (p. 275)
- Paramere not as above; costa with 6-9 setigerous punctures, each lateral margin of pronotum with 20-24 setigerous punctures . . . . . 12.
- 12. Posterior tibiae about 5.3 times longer than broad; paramere as in fig. 485. . . . . **laosanus** (p. 270)
- Posterior tibiae about 6.7-7.3 times longer than broad; paramere as in fig. 470 . . . . . **pseudinsignis** (p. 273)
- 13. Rostrum long, reaching anterior border of 2nd abdominal sternit, 4th rostral segment longer than the 3rd; paramere as in fig. 490 . . . . . **longirostris** (p. 271)
- Rostrum surpassing middle coxae, at best reaching to the posterior, 4th rostral segment shorter than or as long as the 3rd; paramere not as above . . . . . 14.
- 14. Penis with short ductus seminis (fig. 476), paramere as in fig. 475 . . . . **affinis** (p. 267)
- Penis with long ductus seminis (figs. 481, 496), paramere not as above . . . . . 15.
- 15. Paramere as in fig. 495 . . . . . **politus** (p. 272)
- Paramere not as above . . . . . 16.
- 16. Paramere as in fig. 480. . . . . **insignis** (p. 268)
- Paramere as in fig. 499 . . . . . **salvazai** (p. 274)

### ***Scoparipes (Euscoparipes) affinis* Lis**

(figs. 472-476)

*Scoparipes insignis*, not of Vollenhoven: Signoret, 1881c: 204 [part].

*Scoparipes (Euscoparipes) affinis* Lis, 1990a: 174.

**DIAGNOSIS.** - Females of this species may be separated from females of the other species of the subgenus by the presence of 11-18 setigerous punctures on the costa and 40-49 setigerous punctures on each lateral margin of the pronotum, coupled with the rostrum reaching posterior coxae, and the ocular index varying from 4.4 to 4.9. Males are best diagnosed by the shape of the genitalia.

**DESCRIPTION.** - Head (fig. 473) black, dorsally distinctly striated and punctured; paraclypei almost equal in length to clypeus; the latter smooth; each paraclypeus with 15-16 submarginal peg-like setae; eyes reddish brown, ocular index 4.4-4.9;

ocelli yellowish brown or reddish brown, interocellar index 2.8-3.3; antennae brown or blackish brown; rostrum brown, surpassing middle coxae (in male) or reaching the posterior (in female), 3rd segment almost equal in length to the 4th.

Pronotum black, disc punctured as in fig. 472; each lateral margin with a row of 37-49 submarginal setigerous punctures.

Scutellum black, disc with scattered punctures, apex rounded.

Corium black, almost evenly punctured; costal margin with 11-18 setigerous punctures; membrane brown, basally reddish brown, surpassing the tip of abdomen.

Propleuron alutaceous, depression with several small punctures; apex of peritreme as in fig. 474.

Sternites black, glossy in the middle, sides finely punctured and striated.

Legs black or blackish brown; anterior tibiae with 11 stout blunt spines on outer margin; posterior tibiae 5.4-5.9 times longer than broad.

Paramere as in fig. 475, penis as in fig. 476.

Measurements (male and female respectively): body length 11.90-13.35, 12.74-12.84; body width 7.30-7.58, 7.35-7.68; head length 1.63-2.21, 1.98-2.03; head width 3.07-3.15, 3.04-3.07; pronotum length 4.45-4.72, 4.41-4.43; pronotum width 6.85-6.88, 6.76-6.88; scutellum length 4.87-4.92, 4.92-5.00; scutellum width 4.73-4.87, 4.51-4.72; antennal segments 0.70-0.83 : 0.70-0.83 : 0.63-0.68 : 0.76-0.77 : 0.75-0.81, 0.63-0.73 : 0.68-0.71 : 0.62-0.68 : 0.68-0.76 : 0.69-0.76.

#### TYPE MATERIAL EXAMINED

Holotype male of *Scoparipes (Euscoparipes) affinis* LIS: [INDONESIA]: Moeara Tenam, Benkoelen, 1200', W. Sumatra, VI-VII 1935, Museum Leiden, E. le MOULT, *Scoparipes affinis* sp.n., det. J.A. LIS 1989, Holotype det. J.A. LIS 1989 (RNH).

Paratype: 1 female: [INDONESIA]: Java, Preanger, Selabintanah, XII 32, M. WALSH; *Scoparipes affinis* sp.n., det. J.A. LIS 1989, Paratype det. J.A. LIS 1989 (RNH).

#### OTHER MATERIAL EXAMINED (2 males, 6 females, 1 larva)

INDONESIA: Java, Preanger, Ardja-Sari, 2 females 1 male 1 larva 1921, KERKHOVEN, coll. Dr. D. MAC GILLAVRY, det. as *Scoparipes spec. nova?*, 1929 (ZMA, JAL); Java, Batoerraden, G. Slamet, F.C. DRESCHER: 2 females 1 male 1 larva 10-12 VII 1926, coll. Dr. D. MAC GILLAVRY (ZMA, JAL), 1 female II.1938, 800 m, Museum Leiden, det. as *Scoparipes insignis* VOLL. (RNH); Java, 1 female det. as *insignis* by SIGNORET (NhMW).

DISTRIBUTION. - Java, Sumatra.

### ***Scoparipes (Euscoparipes) insignis* (WALKER)**

(figs. 477-481)

*Aethus insignis* WALKER, 1867: 160; BREDDIN, 1906: 10.

*Cyrtomenus insignis* Vollenhoven, 1868a: 177, 1868b: 16; Stål, 1876: 27, syn. with *S. insignis* (WALKER) by Distant, 1899a: 219.

*Aethus insignis* (Vollenhoven): WALKER, 1868: 534.

*Scoparipes insignis* (Vollenhoven): SIGNORET, 1881e: 204 [part]; Lethierry, 1889: 460; Lethierry & Severin, 1893: 62; Breddin, 1900: 287; Schouteden, 1909: 43.

*Scoparipes latipes*, not of SIGNORET: SIGNORET, 1881e: 203 [part].

*Scoparipes insignis* (WALKER): Distant, 1899a: 219.

*Scoparipes (Euscoparipes) insignis*: Lis, 1990a: 175, 1991b: 187, 1991e: 311.

Misidentification: SIGNORET, 1881e: 204 [part].

DIAGNOSIS. - Females of this species may be distinguished by the combination of following features: the costa with 11-19 setigerous punctures, each lateral margin of the pronotum with 27-42 setigerous punctures, the rostrum reaching middle



coxae, and the posterior tibiae 6.7-8.6 times longer than broad. Males are best diagnosed by the shape of genital structures.

**DESCRIPTION.** - Head (fig. 478) blackish brown or brown, dorsally finely striated and punctured; paraclypei equal to or almost equal in length to clypeus, each paraclypeus submarginally with 14-17 peg-like setae; eyes reddish brown or red, ocular index 2.8-4.0; ocelli yellowish brown or reddish brown, interocellar index 1.3-2.2; antennae brown, rostrum brown, reaching at best posterior margin of middle coxae, 4th segment shortest.

Pronotum blackish brown or brown, disc with broad shallow subapical impression in male specimens; each lateral margin with a row of 27-42 submarginal setigerous punctures (fig. 477).

Scutellum black or brownish black, disc almost evenly punctured, sides striated.

Corium brownish black, evenly punctured; each costal margin with 11-19 setigerous punctures; membrane yellowish brown, slightly surpassing the tip of abdomen.

Propleural depression with conspicuous punctures; apex of peritreme as in fig. 479.

Sternites brownish black, glossy in the middle, sides finely punctured and striated.

Legs brownish black or chocolate brown; anterior tibiae with 10-11 stout blunt spines on outer margin; posterior tibiae 5.8-6.9 (in male) or 6.7-8.6 (in female) times longer than broad.

Genital segment large; paramere as in fig. 480, penis with very long ductus seminis (fig. 481).

Measurements (male and female respectively): body length 14.06-14.56, 12.94-13.75; body width 8.29-8.49, 7.28-8.09; head length 1.90-2.17, 1.83-1.95; head width 3.03-3.12, 2.85-3.05; pronotum length 4.57-5.26, 4.08-4.57; pronotum width 7.38-7.67, 6.79-7.52; scutellum length 5.26-5.41, 4.92-5.07; scutellum width 5.07-5.26, 4.74-5.11; antennal segments 0.68-0.76 : 0.76-0.90 : 0.63-0.68 : 0.78-0.85 : 0.80-0.90, 0.80-0.81 : 0.71-0.78 : 0.61-0.73 : 0.78-0.85 : 0.85-0.86.

#### TYPE MATERIAL EXAMINED

Lectotype male of *Aethus insignis* WALKER (designated by LIS, 1990a: 177): [INDONESIA]: B.M. Type; SAUNDERS 65. 13; Tond.; 79. *Aethus insignis*; Brit. Mus. Type No. Hem. 278; *Aethus insignis* WALK. Lectotype det. J.A. LIS 1989 (BMNH).

Lectotype female of *Cyrtomenus insignis* Vollenhoven (designated by LIS, 1990a: 179): [INDONESIA]: Java, coll. v. EYNDH.; No. 4, cotypus; Museum Leiden, *Scoparipes insignis* [!] VOLL.; *Cyrtomenus insignis* VOLL., Lectotype det. J.A. LIS 1988 (RNH).

#### OTHER MATERIAL EXAMINED (12 males, 13 females)

INDONESIA: Sumatra, Medan, S.OK, 1 female L. FULMEK, det. as *latipes* (NhmW); Sumatra, Ma Lor, 1 female XI 77, Sumatra Exp. 1877-1878 (RNH), Tussen Serdang, en het Toba-meer, N.O. Sumatra, 1 female, Dr. B. HAGEN (RNH); Sumatra, Labuan, 1 female, BILIK 1922-23, Palm, Zool. Mus. Helsinki (ZMHU); Java, 1 male, J. WATERSTRADT, ex Museo R. OBERTHUR (IRSNB); Java, G. Slamet, 1 male 15-17 VIII 1925, coll. Dr. D. MAC GILLAVRY (ZMA); Java, Batoerraden, G. SLAMET, F.C. DRESCHER: 1 female X 1936, 800ft., Brit. Mus. 1938-437 (BMNH), 1 female VII.1932 (RNH), 1 female XI.1935, 800m, Museum Leiden, det. as *Scoparipes insignis* VOLL. (RNH), Blawan, 1 male 16 V 1938, H. LUCHT (RNH); Kays, 1 male, det. as *Scoparipes latipes* SIGN., 539, Zool. Mus. Berlin (MNHU), Getassan, 1100m, 1 female P.H.V. DOESBURG, coll. Dr. D. MAC GILLAVRY (ZMA); Preanger, G. Tangkoeban Prahoe, 1 male VIII 1937, 4000-5000 Voet, F.C. DRESCHER, Brit. Mus. 1938-437 (BMNH), Pengalengan, 1 male 11 X 1935, 1600m, DRESCHER (RNH), Tjibogo-Preanger, J.B. Ledru, 1 male R. OBERTHUR 1898, Muséum Paris (MNHN); Java, Banjoewangi, 2 females 1 male LUCHT, det. as *Scoparipes* by KIRITSCHENKO (ZIP, JAL); Java, Bajoekidoel, 1 male 20 I 936, 1 male V 934, LUCHT, det. as *Scoparipes* by KIRITSCHENKO (ZIP); Java, Buitenzorg, 1 female A. WARD, 1901-313 (BMNH); Borneo, 2 females, MUELLER, det. as *Scoparipes insignis* [!] VOLL. (RNH).

MALAYSIA: Borneo Sabah, Mts Crocker, 16 miles N.W. Keningau, 1.400m, 2 males 19.V.1983, Shinji NAGAI (NSMT).

DISTRIBUTION. - Sumatra, Java, Borneo, Sulawesi.

REMARKS. - As I pointed out in my paper on a revision of the genus (Lis, 1990a), several specimens determined (and published) as *S. insignis* SIGN. represented different species; the specimens from Java (SIGNORET, 1881e: 204) pertained to both *S. longirostris* SIGN. and *S. affinis* Lis, and the specimen from Borneo (SIGNORET, 1881e: 204) to *S. stygius* (WALK.).

There is also one specimen of this species labelled "Bengal, Kurseong, 1904, RP. VERSCHREGEN" preserved in IRSNB. I regard it as a case of mislabelling, since the specimen of the genus *Cyrtomenus* (distributed only in the New World) bears the same label as the former.

### ***Scoparipes (Euscoparipes) laosanus* Lis**

(figs. 482-486)

*Scoparipes (Euscoparipes) laosanus* Lis, 1990a: 179.

DIAGNOSIS. - Females of this species may be distinguished by the combination of following features: the costa with 6-8 setigerous punctures; each lateral margin of the pronotum with 21-27 setigerous punctures; the ocular index 3.45-4.1; the posterior tibiae 5.5-6.3 times longer than broad. Males are best diagnosed by the shape of the genitalia.

DESCRIPTION. - Head (fig. 483) black, dorsally distinctly striated and punctured; paraclypei equal in length to clypeus; each paraclypeus submarginally with 13-14 peg-like setae; eyes yellowish brown or brown, ocular index 3.45-4.10; ocelli of the same colour as eyes, interocellar index 2.3-2.9; antennae dark brown or blackish brown, rostrum dark brown, reaching or surpassing middle coxae, 3rd segment longer than the 4th.

Pronotum black, disc punctured as in fig. 482; each lateral margin with a row of 21-27 (in female) or 20-22 (in male) submarginal setigerous punctures.

Scutellum black, disc with scattered punctures (fig. 482).

Corium blackish brown, densely punctured; each costal margin with 6-8 setigerous punctures; membrane brown, narrower than abdomen, reaching or slightly surpassing the tip of abdomen.

Sternites blackish brown, medially glossy, sides finely punctured and striated.

Legs blackish brown; anterior tibiae with 9 stout blunt spines on outer margin; posterior tibiae 5.5-6.3 (in female) or 5.3 (in male) times longer than broad.

Apex of peritreme as in fig. 484.

Paramere as in fig. 485, penis as in fig. 486.

Measurements (male and female respectively): body length 12.24, 11.5-12.34; body width 7.38, 6.67-7.38; head length 2.05, 2.02-2.07; head width 3.37, 3.03-3.12; pronotum length 4.03, 3.93-4.08; pronotum width 6.44, 6.29-6.49; scutellum length 4.52, 4.43-4.62; scutellum width 4.23, 4.57-4.67; antennal segments 0.78 : 0.85 : 0.73 : 0.85 : 0.90, 0.66-0.68 : 0.68-0.76 : 0.58 : 0.78 : 0.80.

#### TYPE MATERIAL EXAMINED

Holotype male of *Scoparipes (Euscoparipes) laosanus* Lis: [VIETNAM]: Tonkin N., Reg. Ha-Giang, Siebens OLIVIER 1916, Muséum Paris, Holotype, det. J.A. Lis, *Scoparipes laosanus* Lis (MNHN).

Paratypes: 1 female: [LAOS]: Laos, X. Khouang, 30 IV 1919, R. Vitalis de SALVAZA, Mus. Leiden; *Scoparipes latipes* WESTW.; Paratype, det J.A. Lis 1989; *Scoparipes laosanus* sp.n. det J.A. Lis 1989 (RNH); 1 female: [LAOS]: Laos, Muong Om, 19 I 1919, R. Vitalis de SALVAZA, Mus. Leiden, *Scoparipes latipes* WESTW., Paratype, det J.A. Lis, *Scoparipes laosanus* Lis (RNH).

OTHER MATERIAL EXAMINED (1 female)

VIETNAM: Tonkin, Than-Hoi, 1 female Juni-Juli, H. FRUHSTORFER, det as. *Scoparipes insignis* (NhMW).

DISTRIBUTION. - Laos, Vietnam.

***Scoparipes (Euscoparipes) longirostris* SIGNORET**

(figs. 487-491)

*Scoparipes insignis*, not of WALKER: SIGNORET, 1881e: 204 [part].

*Scoparipes? longirostris* SIGNORET, 1881e: 205; DISTANT, 1902: 88.

*Scoparipes longirostris*: LETHIERRY & SEVERIN, 1893: 63; ATKINSON, 1887: 45.

*Scoparipes (Euscoparipes) longirostris*: LIS, 1990a: 180.

DIAGNOSIS. - The species is best diagnosed by the very long rostrum, reaching the 1st or the 2nd abdominal sternite, and having the 4th rostral segment longer than the 3rd.

DESCRIPTION. - Head (fig. 488) blackish brown or brown, dorsally striated and finely punctured; paraclypei equal to or almost equal to clypeus; each paraclypeus submarginally with a row of 14-17 peg-like setae; eyes brownish orange or reddish brown, ocular index 4.6-5.2 (in male) or 4.1-4.8 (in female); ocelli brownish orange or reddish brown, interocellar index 2.4-2.9; antennae brown, dark brown or blackish brown, long, 1st segment almost reaching lateral margin of head; rostrum dark brown, very long, reaching 1st or 2nd sternite, 4th segment longer than the 3rd.

Pronotum blackish brown or black, disc punctured as in fig. 487; each lateral margin with a row of 31-43 submarginal setigerous punctures.

Scutellum black or blackish brown, disc almost evenly punctured, except for anterolateral angles and apex (fig. 487).

Corium black, densely punctured; costal margin with 9-17 (9-14 in female, 10-17 in male) setigerous punctures; membrane brown or milky brown, surpassing the posterior extremity of abdomen.

Evaporatoria as in fig. 489.

Sternites black or blackish brown, glossy in the middle, sides punctured and striated.

Legs black or blackish brown, tarsi brown; anterior tibiae bearing 10-12 stout blunt spines on outer margin; posterior tibiae 5.9-6.1 (in female) or 5.1 (in male) times longer than broad.

Paramere as in fig. 490, penis as in fig. 491.

Measurements (male and female respectively): body length 11.43-13.25, 13.25-14.16; body width 6.27-7.48, 7.68-7.99; head length 2.02-2.17, 2.29-2.54; head width 2.80-3.12, 3.29-3.39; pronotum length 3.95-4.52, 4.87-5.21; pronotum width 5.70-6.69, 7.08-7.23; scutellum length 4.03-4.57, 4.77-5.16; scutellum width 3.88-4.77, 4.92-5.21; antennal segments 0.73-0.83 : 0.61-0.83 : 0.61-0.71 : 0.71 : 0.71, 0.76-0.78 : 0.81-0.82 : 0.63-0.68 : 0.73-0.78 : 0.73-0.78.

TYPE MATERIAL EXAMINED

Lectotype male of *Scoparipes longirostris* SIGNORET (designated by LIS, 1990a: 182): [?]: Deyr, Unde?; Holotypus; No. 68. *Scoparipes longirostris* SIGN.; Museum Leiden, *Scoparipes longirostris* SGN., Lectotype det. J.A. LIS 1988 (RNH).

OTHER MATERIAL EXAMINED (1 male, 3 females)

INDONESIA: Java, Kediri, 1 male, det. as *Scoparipes insignis* VOLL. by DISTANT, det. as *Scoparipes longirostris* by R.C. FROESCHNER 59 (BMNH); Sumatra, Fort de Kock, 2 females, 1921, 920m, E. JACOBSON (RNH); Sumatra, Pad. Bovenl., 1 female, 1914, E. JACOBSON (RNH).

DISTRIBUTION. - Java, Sumatra.

***Scoparipes (Euscoparipes) minor* BREDDIN**

*Scoparipes minor* BREDDIN, 1900: 287; BERGROTH, 1908: 148.

*Scoparipes (Euscoparipes) minor*: LIS, 1900: 184.

The species is unknown to me in nature, since neither the type material nor other specimens determined as such have been found despite repeated efforts. According to the original description this species is best diagnosed by the small body size (about 9.75 mm in length, and 5.75 mm in width).

ORIGINAL DESCRIPTION. - Male: *Corpore subelongato-ovato, transversaliter sat convexo. Capite fortiter denseque rugoso-punctato, vertice tantum glabro. Tylo subaequilate percurrente, sed iugis paulo brevior. Margine antico capitis rotundato, medio inciso, stylulis et armato. Pronoto inter humeros longitudine sua mediana tertia parte sua latiore; lateribus longe subrectis leviterque antrorsum convergentibus, antice rotundato convergentibus, setis nonnullisque stylulis marginalibus armatis. Pronoto impressione antica in mare destituto, impressione levi transversa pone medium posita et irregulariter punctata divisio; parte anteriore disco glabra, acervulos punctorum minorum hic illicve exhibente, marginibus lateralibus et antico dense et fortiter punctatis, hac parte antica punctata, postice triloba, lobo medio in striam punctulatam medianam retrorsum continuato. Parte postica antice sparsim punctata, punctulis nonnullis intermixtis, postice et in humeris glabra. Scutello puncta nonnulla maiora punctulaque intermixta exhibente, linea impressa laterali antice et postice decurata densius punctata. Corio sat remote subtiliterque punctato; sectoribus omnibus utrimque serie punctorum inclusis; margine costali setis 6-9 instructo; clavi punctis in series tres ordinatis. Ventre remotiuscule punctato, lateribus dense longitrorsum rugulosis, disco glabro, incisuris omnibus plus minusve distincte carinulatis. Mesosterni carina mediana subpercurrente, postice haud dilata. Antennarum articulis duobus basalis aequalis; secundo tertio paululo brevior; hoc articulo quartoque quintoque fere aequalibus. Rostro brevisculo, coxas intermedias haud attingente; articulo quatuor omnium brevissimo, secundo longissimo sed primo non multo longiore. Crista interiore scoparia tibiae posticae maris distinctissima. Niger, infra cum pedibus picescens; tarsi, antennis, rostro ferruginea-flavis, huius basi paulo obscuriore. Long. corp. 9 3/4 mm; lat. hum. 5 1/4, lat. max. abd. 5 3/4 mm. 1 mas. Soekaranda (m. Januario).*

DISTRIBUTION. - Sumatra.

***Scoparipes (Euscoparipes) politus* HORVÁTH**

(figs. 492-496)

*Scoparipes politus* HORVÁTH, 1919: 234.

*Scoparipes (Euscoparipes) politus*: LIS, 1990a: 184.

DIAGNOSIS. - Females of this species can be easily separated from females of other species of the subgenus by the combination of following features: the costa with 15-20 setigerous punctures; each lateral margin of the pronotum with 38-52 setigerous punctures; the scutellum weakly punctured, almost smooth; the ocular index 3.4-4.0; the posterior tibiae 5.5-6.1 times longer than broad. Males are best

diagnosed by the shape of genital structures.

**DESCRIPTION.** - Head (fig. 493) black, lateral parts more brown, dorsal surface striated and finely punctured; paraclypei equal in length to clypeus, each submarginally with 14-18 peg-like setae; eyes reddish brown or yellowish brown, ocular index 3.3-3.6 (in male) or 3.4-4.0 (in female); ocelli of the same colour as eyes, interocellar index 2.1-2.4; antennae brown; rostrum brown, long, reaching posterior coxae, 3rd segment longer than the 4th.

Pronotum black, puncturation of disc distinctly weaker than that of corium (fig. 492); each lateral margin with a row of 37-43 (in male) or 38-50 (in female) submarginal setigerous punctures.

Scutellum black, disc weakly punctured, almost smooth.

Corium brownish black, distinctly densely punctured; costal margin with 14-20 setigerous punctures; membrane brown, varying in length and width.

Apex of peritreme as in fig. 494.

Sternites black or blackish brown, glossy in the middle, sides punctured and distinctly striated.

Legs blackish brown; anterior tibiae with 10 stout blunt spines on outer margin; posterior tibiae 5.1-5.3 (in male) or 5.5-6.1 (in female) times longer than broad.

Penis with long ductus seminis (fig. 496), paramere as in fig. 495.

Measurements (male and female respectively): body length 14.66-15.47, 14.86-15.77; body width 8.39-8.69, 8.80-9.30; head length 2.17-2.46, 2.36-2.56; head width 3.15-3.49, 3.63-3.73; pronotum length 5.41-5.46, 5.21-5.46; pronotum width 7.72-7.87, 8.16-8.41; scutellum length 5.11-5.41, 5.51-5.85; scutellum width 5.07-5.26, 5.55-5.80; antennal segments 0.78-0.85 : 0.90-0.98 : 0.73-0.88 : 0.88-1.00 : 0.96-0.97, 0.78-0.88 : 0.85-0.93 : 0.73-0.80 : 0.90 : 5th missing.

#### TYPE MATERIAL EXAMINED

Lectotype female of *Scoparipes politus* HORVÁTH (designated by LIS, 1990a: 186): [INDONESIA]: Sumatra, Dolok-Baroe; *politus* H. det. HORVÁTH; *Scoparipes politus*; Type; coll. Mus. Nat. Nat. Hung., Lectotype, det. J.A. LIS (HNHM).

#### OTHER MATERIAL EXAMINED (3 males, 4 females)

MALAYSIA: Malay Penin., Pahang F.M.S., Labok Tamang, 3500', 1 female 31 VII 1922, E. SEISMUND, ex F.M.S. Museum, B.M. 1955-354, det. as *Scoparipes* species by FROESCHNER 72 (BMNH).

INDONESIA: Sumatra, 1 female, coll. FALLOU, det. as *Cyrtomenus insignis*, Muséum Paris (MNHN); Sumatra, Medan, Env. de Dolok-Baroe, 1 male, 2e semestre 1905, det. as *Scoparipes insignis* Vollen. by Dr. M. ROYER, Muséum Paris, coll. ROYER (MNHN); Sumatra: Fort de Kock, 920 m, 2 males I 1921, E. JACOBSON (RNH); Pad Bovenl., 1 female 1914, E. JACOBSON (RNH), Solok, 1 female 1914, P.O. STOLZ (RNH).

**DISTRIBUTION.** - Malaya, Sumatra.

### *Scoparipes (Euscoparipes) pseudinsignis* LIS

(figs. 470-471)

*Scoparipes (Euscoparipes) pseudinsignis* LIS, 1990a: 186.

**DIAGNOSIS.** - Males of this species are best diagnosed by the shape of genitalia (figs. 470-471). The species is morphologically similar to *S. insignis*, but can be easily separated from the latter by the number of setigerous punctures on the costal margin (7-9 in *pseudinsignis*, 11-19 in *insignis*), and on the lateral margin of the pronotum (21-24 in *pseudinsignis*, 27-42 in *insignis*). Females unknown.

**DESCRIPTION.** - Head black, blackish brown, or brown, dorsally finely punctured;

paraclypei equal to or almost equal to clypeus, each paraclypeus submarginally with 13-14 peg-like setae; eyes reddish brown, brown or yellowish brown, ocular index 3.00-3.65; ocelli reddish brown, interocellar index 1.7-2.3; antennae brown or dark brown; rostrum brown or dark brown, reaching middle coxae, 3rd segment longer than the 4th.

Pronotum black, blackish brown or brown; disc with broad shallow subapical impression, puncturation as in *S. insignis*; each lateral margin with a row of 21-24 submarginal setigerous punctures.

Scutellum of the same colour as pronotum; puncturation of disc as in *S. insignis*, but somewhat weaker.

Corium black, blackish brown or brown, puncturation as in *S. insignis*; costal margin with 7-9 setigerous punctures; membrane brown, surpassing the posterior extremity of abdomen.

Evaporatoria as in *S. insignis*.

Sternites black, blackish brown or brown, laterally punctured.

Legs brown or blackish brown; anterior tibiae with 9 stout blunt spines on outer margin; posterior tibiae 6.7-7.3 times longer than broad.

Penis as in fig. 471, paramere as in fig. 470.

Measurements (male only): body length 12.74-13.95; body width 7.58-8.19; head length 1.88-2.29; head width 2.46-3.05; pronotum length 4.28-4.97; pronotum width 6.44-7.38; scutellum length 4.43-5.21; scutellum width 4.52-4.97; antennal segments 0.66-0.76 : 0.68-0.78 : 0.68-0.78 : 0.78-0.85 : 0.93.

#### TYPE MATERIAL EXAMINED

Holotype male of *Scoparipes (Euscoparipes) pseudinsignis* Lis: [MALAYSIA]: Long Majam, Baram River, Sarawak, 4 X 1920, J.C. MOULTON, ex F.M.S. Museum, B.M. 1955-354, *Scoparipes pseudinsignis* sp.n. det. J.A. Lis 1989; Holotype det. J.A. Lis 1989 (BMNH).

Paratypes: 5 males: [MALAYSIA]: Long Majam, Baram River, Sarawak, 4 X 1920, J.C. MOULTON, ex F.M.S. Museum, B.M. 1955-354, *Scoparipes pseudinsignis* sp.n. det. J.A. Lis 1989; Paratype det. J.A. Lis 1989 (BMNH, JAL).

DISTRIBUTION. - Borneo (Sarawak).

### *Scoparipes (Euscoparipes) salvazai* Lis

(figs. 497-499)

*Scoparipes (Euscoparipes) salvazai* Lis, 1990a: 187, 1991b: 187.

DIAGNOSIS. - Females of this species are best diagnosed by the following combination of characters: the costa with 9-11 setigerous punctures; each lateral margin of the pronotum with 29-30 setigerous punctures; the posterior tibiae about 5.3 times longer than broad; the rostrum reaching middle coxae; the ocular index 2.9. Males can be easily separated by the shape of genitalia.

DESCRIPTION. - Head black, dorsally distinctly striated and punctured; paraclypei almost equal to or equal to clypeus, each paraclypeus submarginally with 13-14 peg-like setae; eyes yellowish brown, ocular index 2.9-3.6; ocelli brown, interocellar index about 2.3; antennae brown; rostrum brown or blackish brown, reaching or slightly surpassing middle coxae, 3rd rostral segment longer than the 4th.

Pronotum black; each lateral margin of pronotum with a row of 27-30 submarginal setigerous punctures; disc with puncturation as in fig. 497.

Scutellum black, its disc with scattered punctures (fig. 497).



Corium brownish black or black, densely punctured, punctures larger than those on scutellum; each costal margin with 9-12 setigerous punctures; membrane brown, narrower than abdomen and not reaching its tip.

Apex of peritreme as in fig. 498.

Sternites black, sides striated and punctured.

Legs brownish black; anterior tibiae with 9-10 stout blunt spines on outer margin; posterior tibiae about 5.3 times longer than broad.

Penis similar to that of *S. (E.) laosanus* Lis, but ductus seminis slightly longer; paramere as in fig. 499.

Measurements (male and female respectively): body length 11.3-12.38, 10.57-14.36; body width 6.70-7.50, 6.35-8.49; head length 1.84-1.90, 1.95-2.05; head width 3.02-3.07, 2.80-3.44; pronotum length 4.08-4.41, 3.80-4.57; pronotum width 6.41-6.90, 5.95-7.52; scutellum length 4.33-4.65, 4.05-5.31; scutellum width 4.18-4.68, 3.55-5.16; antennal segments 0.65-0.77 : 0.55-0.56 : 0.70-0.71 : 0.78-0.80 : 0.82-0.84, 0.63-0.83 : 0.61-0.78 : 0.67-0.76 : 0.80-0.88 : 0.75-0.83.

#### TYPE MATERIAL EXAMINED

Holotype female of *Scoparipes (Euscoparipes) salvazai* Lis: [LAOS]: Haut Mekong, Muong Sing, 18 IV 1918, R.V. DE SALVAZA, *insig.*, *Scoparipes salvazai* sp.n. det. J.A. Lis 1989; Holotype det. J.A. Lis 1989 (BMNH).

#### OTHER MATERIAL EXAMINED (2 males, 1 female)

VIETNAM: Tonkin, 1 male F. de B., 37 (MNHN); 40km No Taj-Nguen, 600-800m, 1 female 1 male (JAL).

DISTRIBUTION. - Laos, Vietnam.

### *Scoparipes (Euscoparipes) stygius* (WALKER)

(figs. 500-503)

*Aethus stygius* WALKER, 1867: 161; LETHIERRY & SEVERIN, 1893: 81.

*Scoparipes latipes*, not of WESTWOOD: DISTANT, 1899a: 219 [part]; HORVÁTH, 1919: 233 [part].

*Scoparipes latipes*, not of SIGNORET: LETHIERRY & SEVERIN, 1893: 63 [part].

*Scoparipes insignis*, not of VOLLENHOVEN: SIGNORET, 1881e: 204 [part].

*Scoparipes (Euscoparipes) stygius*: Lis, 1990a: 189; 1991b: 188.

DIAGNOSIS. - Males of this species are best diagnosed by the shape of genitalia, females by the combination of following features: the costa with 5-8 setigerous punctures; each lateral margin of the pronotum with 19-24 setigerous punctures; the posterior tibiae 7.3-8.1 times longer than broad; the ocular index about 2.9-3.6.

DESCRIPTION. - Head (fig. 500) black, blackish brown or brown, dorsally distinctly striated and punctured; paraclypei equal to or almost equal to clypeus, each submarginally with 13-15 peg-like setae; eyes reddish brown or red, ocular index 3.1-3.5 (in male) or 2.9-3.6 (in female); ocelli of the same colour as eyes, interocellar index 1.7-2.2; antennae brown; rostrum brown, reaching middle coxae, 3rd segment longer than the 4th.

Pronotum black, blackish brown or brown, subapically with broad shallow median impression in male specimens; each lateral margin with a row of 15-24 submarginal setigerous punctures.

Scutellum of the same colour as pronotum, disc punctured as in *S. insignis*, but more rare; sides finely striated.

Corium of same colour as pronotum, densely punctured, punctures a little smaller than those on scutellum; costal margin with 4-8 setigerous punctures; membrane brown, surpassing the posterior extremity of abdomen.

Apex of peritreme as in fig. 501.

Sternites brown, brownish black or black, laterally finely punctured and distinctly striated.

Legs brownish black or brown; anterior tibiae with 8-9 stout blunt spines on outer margin; posterior tibiae 7.3-8.2 (in female) or 6.8-7.1 (in male) times longer than broad.

Paramere as in fig. 502, penis with long ductus seminis (fig. 503).

Measurements (male and female respectively): body length 11.83-12.34, 11.33-12.24; body width 6.67-6.88, 6.19-7.18; head length 1.58-1.73, 1.58-1.76; head width 2.66-2.78, 2.63-2.76; pronotum length 3.93-4.23, 3.49-4.03; pronotum width 6.05-6.25, 5.95-6.54; scutellum length 4.23-4.38, 4.57-4.82; scutellum width 4.03-4.28, 4.03-4.43; antennal segments 0.56-0.63 : 0.61-0.73 : 0.61-0.68 : 0.80-0.85 : 0.78-0.80, 0.56-0.63 : 0.63-0.68 : 0.56-0.68 : 0.76-0.84 : 0.81-0.85.

#### TYPE MATERIAL EXAMINED

Lectotype female of *Aethus stygius* WALKER (designated by LIS, 1990a: 190): [MALAYSIA]: Sar.; Borneo 5644; 80. *Aethus stygius*; Type; Brit. Mus. Type. No. Hem. 277; *Scoparipes under latipes* SIGN.; *Aethus stygius* WALK, Lectotype det. J.A. LIS 1989 (BMNH).

Paralectotype female: [MALAYSIA]: Sar.; paratype; SAUNDERS 65-13; *Aethus stygius*, WALKER's catal.; *Scoparipes under latipes* SIGN.; *Aethus stygius* WALK., Paralectotype det. J.A. LIS 1989 (BMNH).

#### OTHER MATERIAL EXAMINED (3 males, 5 females)

MALAYSIA: Borneo, Kinabalu, 1 female 5 VIII 1903, réc. J. WATERSTRADT (IRSNB); Borneo, 1 female no 2, MULLER, det. as *S. insignis* [!] VOLL., cotypus (RNH); Borneo Sept. Pontianak, 2 males 1897, R. OBERTHUR, Muséum Paris (MNHN); Borneo, XANTHUS, 2 females, det. as *latipes* W. by HORVÁTH (HNHM); Borneo, VOLL., 1 male, det. as *latipes* HOPE by Mayr, *Scoparipes latipes* HOPE tres rare, 107, 407, SIGN. del. (NHMW); N.W. Borneo, Kuching, 1 female Capt. July 17.00 by DYAK, coll. on flowering tree, Pres. 1900 by R. SHELFORD, 1900-948, det. as *Scoparipes latipes* SIGN. by R.J. IZZARD 1937 (BMNH).

DISTRIBUTION. - Borneo.

BIOLOGICAL DATA. - One examined female was collected on a flowering tree.

### ***Scoparipes (Euscoparipes) subitus* Lis**

(fig. 504)

*Scoparipes (Euscoparipes) subitus* Lis, 1990a: 190.

DIAGNOSIS. - The species is known only from the holotype female; it is closely related to females of *S. laosanus*, but can be separated from the latter by the posterior tibiae 7.7 times longer than broad (5.5-6.3 in *laosanus*), the ocular index about 2.9 (3.45-4.10 in *laosanus*), the interocellar index about 1.9 (2.3-2.9 in *laosanus*), and by the densely punctured scutellum (weakly punctured in *laosanus*).

DESCRIPTION. - Head black, lateral margins brown, dorsal surface distinctly punctured, except for vertex and clypeus; paraclypei as long as clypeus; each paraclypeus submarginally with 14 peg-like setae; eyes brown, ocular index 2.9; ocelli yellowish brown, interocellar index 1.9; rostrum brown, reaching middle coxae, 3rd segment longer than the 4th.

Pronotum black; each lateral margin with 24-25 setigerous punctures; puncturation of disc as in *S. laosanus*. Scutellum black, disc distinctly densely punctured (fig. 504).

Corium brownish black, punctured as in *S. laosanus*; each costal margin with 6-7 setigerous punctures; membrane brown, narrower than abdomen, reaching its tip.

Evaporatoria and apex of peritreme as in *S. laosanus*.

Sternites blackish brown, sides striated and punctured.

Legs blackish brown; anterior tibiae with 8 stout spines on outer margin; posterior tibiae 7.7 times longer than broad.

Measurements (female only): body length 13.15; body width 7.5; head length 1.93; head width 2.88; pronotum length 3.79; pronotum width 6.59; scutellum length 4.72; scutellum width 4.52; antennae missing.

#### TYPE MATERIAL EXAMINED

Holotype female of *Scoparipes (Euscoparipes) subitus* Lis: [SINGAPORE]: Singapour, Hombron, 1841, Muséum Paris, 2122 41, *Scoparipes* sp.?, We-I YANG det. 1935, *Scoparipes subitus* Lis det. J.A. Lis, Holotype det. J.A. Lis (MNHN).

DISTRIBUTION. - Singapore.

### Genus *Scoparipoides* Lis

*Scoparipoides* Lis, 1990b: 224.

DIAGNOSIS. - The genus is closely related to *Scoparipes* SIGN. in the general habitus and the shape of the peritremal apex; nevertheless it can be easily separated from the latter by the smaller body length (6.52-9.40 in *Scoparipoides*, 9.75-15.80 in *Scoparipes*), the posterior tibiae only slightly broadened (distinctly broadened and compressed in *Scoparipes*), and by the absence of a row of close stiff hairs on the dorsal surface of the posterior tibiae in male specimens (such a row is present in males of *Scoparipes*).

DESCRIPTION. - Body elongately ovate, 6.52-9.40 mm in length.

Head semicircular in outline; paraclypei as long as or slightly longer than clypeus, submarginally with a row of setigerous punctures bearing numerous peg-like setae and a few hair-like setae; clypeus with a pair of subapical setigerous punctures; eyes projecting beyond lateral margins of head; ocelli distinctly developed; antennae 5-segmented.

Pronotum broader than long, anterior margin deeply angularly insinuated; lateral margins with a row of submarginal setigerous punctures; umbones not swollen.

Scutellum longer than broad, basal and lateral rows of punctured distinctly developed.

Corium divided into clavus, meso- and exocorium, disc almost evenly punctured; costa with setigerous punctures; membrane not reduced.

Propleuron with deep depression, usually bearing a few punctures; evaporatoria large, apex of peritreme with broad polished lobe posteriorly (figs. 505, 508, 514).

Sternites punctured laterally, sometimes also wrinkled.

Posterior tibiae slightly broadened; dorsal surface with a few hairs only.

Male genitalia of the geotomine type, similar to those of *Scoparipes* and *Pseudoscoparipes* in general appearance.

TYPE OF GENUS. - *Scoparipoides yangi* Lis, 1990, by original designation.

#### Key to species of *Scoparipoides*

1. Costa with 1 setigerous puncture; each lateral margin of pronotum with less than 10 submarginal setigerous punctures (6-8); paramere as in fig. 506, penis as in fig. 507. . . . . *ceylonicus* (p. 278)

- Costa with 4-15 setigerous punctures; each lateral margin of pronotum with more than 10 submarginal setigerous punctures (13-28); paramere and penis not as above . . . . 2.
- 2. Costa with more than 10 setigerous punctures (14-15); each lateral margin of pronotum with 27-28 submarginal setigerous punctures . . . . . *yangi* (p. 280)
- Costa with less than 10 setigerous punctures (4-7); each lateral margin of pronotum with 13-19 submarginal setigerous punctures . . . . . 3.
- 3. Ocelli small, distance between ocelli 10-12 times longer than a diameter of ocellus; each lateral margin of pronotum with 13-15 submarginal setigerous punctures; paramere as in fig. 511, penis as in fig. 512 . . . . . *scutellatus* (p. 279)
- Ocelli large, distance between ocelli 5-7 times longer than a diameter of ocellus; each lateral margin of pronotum with 17-19 submarginal setigerous punctures; paramere as in fig. 509, penis as in fig. 510 . . . . . *curviductus* (p. 279)

### *Scoparipoides ceylonicus*, new species

(figs. 505-507)

**DIAGNOSIS.** - The presence of the single setigerous puncture on the costa and 6-8 submarginal setigerous punctures on each lateral margin of the pronotum will mark this species as distinct from the other three in the genus.

**DESCRIPTION.** - Head pronotum and scutellum almost black, corium dark castaneous. Head dorsally alutaceous; paraclypei laterally slightly wrinkled and finely punctured, each submarginally with 9-11 setigerous punctures (7-8 peg-like setae, 2-3 hair-like setae); clypeus as long as paraclypei, subapically with two peg-like setae; eyes blackish brown, ocular index 4.15 (in male) or 3.82 (in female); ocelli reddish brown, interocellar index 2.4-2.8, ocellar index 6.7-7.0; antennae pale brown or brown; rostrum brown, reaching middle coxae.

Pronotal disc weakly punctured; anteromedian part with several punctures; postmedian part with a band of scattered punctures; lateral parts with a few punctures; all punctures large, but not as distinct as those on corium; each lateral margin with a row of 6-8 submarginal setigerous punctures.

Scutellum sparsely punctured, punctures larger than those on corium; anterolateral angles and apex impunctate.

Corium densely, almost evenly punctured; punctures distinct, smaller than those on pronotum and scutellum; clavus with one complete and two partial rows of punctures; mesocorium with two rows of punctures paralleling clavo-corial suture, mesocorial disc almost evenly punctured; exocorium with puncturation weaker than those of mesocorium; costa with 1 setigerous puncture; membrane brown, slightly surpassing the tip of abdomen.

Propleuron alutaceous, depression distinctly punctured; apex of peritreme as in fig. 505. Sternites laterally densely punctured and slightly transversely wrinkled.

Legs not specifically modified.

Ductus seminis slender (fig. 507), paramere with large tooth on dorsal surface (fig. 506).

Measurements (male and female respectively): body length 8.33, 8.82; body width 4.58, 4.75; head length 1.47, 1.48; head width 2.01, 2.11; pronotum length 2.70, 2.94; pronotum width 4.31, 4.56; scutellum length 3.04, 3.24; scutellum width 2.59, 2.89; antennal segments (male only): 0.46 : 0.43 : 0.55 : 4th and 5th missing.

#### TYPE MATERIAL EXAMINED

Holotype male: [SRI LANKA]: GREEN, Ceylon, ex coll. R. HOLYNSKI (JAL).

Paratype female: [SRI LANKA]: the same data as the holotype (JAL).

DISTRIBUTION. - Sri Lanka.

***Scoparipoides curviductus*, new species**

(figs. 508-510)

DIAGNOSIS. - The species may be recognized within the genus by the presence of 4-7 setigerous punctures on the costa, 17-19 submarginal setigerous punctures on each lateral margin of the pronotum, and the large ocelli (ocellar index 5.0-7.0). Besides, it differs from other species of the genus in the long and apically curved ductus seminis (fig. 510).

DESCRIPTION. - Body from castaneous to black.

Head dorsally alutaceous, finely punctured, laterally slightly wrinkled; clypeus slightly shorter than paraclypei, subapically with two peg-like setae; each paraclypeus with a row of 12-13 submarginal setigerous punctures (9-10 peg-like setae, 3-4 hair-like setae); eyes reddish brown, ocular index 3.69-4.76; ocelli reddish brown, interocellar index 3.1-3.3, ocellar index 5.6-6.6; antennae brown; rostrum brown, reaching middle coxae.

Pronotum subquadrate; disc laterally and postmedially weakly punctured; each lateral margin with a row of 17-19 submarginal setigerous punctures.

Scutellum from moderately to densely punctured; punctures more distinct than those on pronotum; anterolateral angles, lateral parts and apex almost impunctate.

Corium with punctures almost of the same size as those on scutellum; clavus with one complete and two partial rows of punctures; mesocorium with two rows of punctures paralleling clavo-corial suture, mesocorial disc densely, almost evenly punctured; costa with 4-7 setigerous punctures; membrane brown, surpassing the tip of abdomen.

Propleuron almost impunctate (in female specimens), or with a few punctures in depression (in male specimens); evaporative area on mesopleuron with numerous brown hairs anteriorly, apex of peritreme as in fig. 508.

Sternites laterally coarsely punctured and slightly transversely wrinkled.

Legs not specifically modified.

Paramere as in fig. 509; ductus seminis stout, long, apically recurved (fig. 510).

Measurements (male and female respectively): body length 8.38, 7.70-8.63; body width 4.61, 4.31-4.98; head length 1.23, 0.98-1.33; head width 1.86, 1.81-1.91; pronotum length 2.70, 2.40-2.84; pronotum width 4.22, 3.92-4.46; scutellum length 3.09, 2.94-3.33; scutellum width 2.84, 2.60-2.85; antennal segments: 0.41 : 0.47 : 0.49 : 0.60 : 0.64, 0.37-0.44 : 0.41-0.42 : 0.43-0.46 : 0.51-0.55 : 0.55-0.58.

TYPE MATERIAL EXAMINED

Holotype male: [INDIA]: Museum Leiden, South India, Anamalai Hills, Cinchona, 3500ft., IV.1964, P. SUSAI NATHAN (RNH).

Paratypes: 2 females: [INDIA]: the same data as the holotype (RNH, JAL).

DISTRIBUTION. - India.

***Scoparipoides scutellatus* (DOHRN), new combination**

(figs. 511-512)

*Aethus scutellatus* DOHRN, 1860: 400; WALKER, 1867: 158; STÅL, 1876: 26; KIRBY, 1891: 80; LETHIERRY & SEVERIN, 1893: 81.

*Cydnus scutellatus*: BREDDIN, 1909: 261; LETHIERRY & SEVERIN, 1893: 68.

*Cydnus? scutellatus*: DISTANT, 1902: 93.

**DIAGNOSIS.** - The presence of 4-6 setigerous punctures on the costa and 13-15 submarginal setigerous punctures on each lateral margin of the pronotum, coupled with the small ocelli (ocellar index 10.0-12.0) will separate this species from all others within the genus.

**DESCRIPTION.** - Body blackish brown.

Head alutaceous, dorsally impunctate except for setigerous punctures; clypeus as long as paraclypei, submarginally with two peg-like setae; each paraclypeus with a row of 13-15 submarginal setigerous punctures; eyes yellowish brown, ocular index 3.80-4.44; ocelli yellowish brown, small, ocellar index 10.0-12.0, interocellar index 2.7-2.9; antennae pale brown; rostrum brown, reaching middle coxae.

Pronotum almost impunctate, disc laterally and postmedially with several almost indistinct punctures; each lateral margin with a row of 13-15 submarginal setigerous punctures.

Scutellum sparsely punctured, punctures slightly more distinct than those on pronotum.

Corium distinctly punctured, punctures almost of the same size as those on scutellum; clavus with one complete and two partial rows of punctures; mesocorium with two rows of punctures paralleling clavo-corial suture, mesocorial disc densely, almost evenly punctured; exocorium densely punctured; costa with 4-6 setigerous punctures; membrane milky brown, reaching or slightly surpassing the tip of abdomen.

Propleural depression with a row of distinct punctures; evaporatorium of mesopleuron with numerous brownish hairs anteriorly.

Sternites laterally densely punctured. Legs not specifically modified.

Paramere as in fig. 511, penis as in fig. 512.

Measurements (male and female respectively): body length 6.52, 6.91; body width 3.82, 3.97; head length 1.03, 1.27; head width 1.76, 1.81; pronotum length 2.16, 2.21; pronotum width 3.63, 3.77; scutellum length 2.65, 2.70; scutellum width 2.25, 2.35; antennal segments: 0.34 : 0.31 : 0.37 : 4th and 5th missing, 0.39: 0.32 : 0.38 : 4th and 5th missing.

**TYPE MATERIAL EXAMINED**

Lectotype female of *Aethus scutellatus* DOHRN (present designation): [SRI LANKA]: Ceylon, NIETNER; Type; Mus. Zool. Polonicum, Warszawa 12/45; *Cydnus scutellaris* [!] DOHRN, type (IZPAS).

**OTHER MATERIAL EXAMINED (1 male)**

PHILIPPINES: Philippines, E. SIMONE, 1 male 1903-91, ex coll. R. HOLYNSKI (JAL).

**DISTRIBUTION.** - Sri Lanka, Philippines.

***Scoparipoides yangi* Lis**  
(figs. 513-514)

*Scoparipoides yangi* Lis, 1990b: 226.

**DIAGNOSIS.** - The key character concerning the presence of numerous setigerous punctures on the lateral body margins (14-15 on the costa, 27-28 on each lateral margin of the pronotum) is the most reliable feature for separating this species from its congeners.

**DESCRIPTION.** - Head black, punctured; clypeus as long as paraclypei, subapically with a pair of setigerous punctures; each paraclypeus with a row of 13 submarginal



peg-like setae; eyes brown, ocular index 3.8; ocelli yellowish brown, interocellar index 2.4; antennae dark brown, 2nd segment longer than 3rd; rostrum brown, reaching anterior margin of middle coxae.

Pronotum black, about 1.68 times as broad as long; disc punctured as in fig. 513; each lateral margin with a row of 27-28 submarginal setigerous punctures.

Scutellum black, disc distinctly punctured (fig. 513).

Corium of the same colour as scutellum and pronotum, densely punctured; costa with 14-15 setigerous punctures; membrane brown, slightly extending beyond posterior extremity of abdomen.

Propleuron with a few punctures in depression; apex of peritreme with elongated terminal lobe (fig. 514).

Sternites brownish black, sides striated and punctured.

Legs brownish black, not specifically modified, tarsi pale brown.

Measurements (female only): body length 9.40; body width 5.76; head length 1.46; head width 2.32; pronotum length 3.10; pronotum width 5.21; scutellum length 3.69; scutellum width 3.74; antennal segments 0.54: 0.56: 0.49: 4th and 5th missing.

#### TYPE MATERIAL EXAMINED

Holotype female of *Scoparipoides yangi* Lis: [VIETNAM]: Muséum Paris, Annam, coll. des Nuages, près Tourane, Mme POILANE 1923, *Scoparipes* sp.?, We-I YANG det. 1935; *Scoparipoides yangi* Lis; Holotype, det. J.A. Lis (MNHN).

DISTRIBUTION. - Vietnam.

REMARK. - The additional pair of setigerous punctures on the paraclypei, regarded by me (Lis, 1990b) as a character of the generic value, seems to be only a morphological aberration.

## REFERENCES

- AHMAD, I. 1986. A fool-proof technique for inflation of male genitalia in Hemiptera (Insecta). *Pak. J. Ent.*, 1: 111-112.
- AHMAD, I., McPHERSON, J.E. 1990. Male genitalia of the type species of *Corimelaena* White, *Galgupha* Amyot and Serville, and *Cydnoides* Malloch (Hemiptera: Cydnidae: Corimelaeninae) and their bearing on classification. *Ann. ent. Soc. Am.*, 83 (2): 162-170.
- AHMAD, I., MOIZUDDIN, M. 1977. Comparative functional morphology of scent gland apparatus of four cydnines of Pakistan (Hemiptera: Cydnidae) with note on their phylogenetic considerations. *Acta biol. cracov., Zool.*, 20 (1): 75-85.
- AHMAD, I., MOIZUDDIN, M. 1980. A new tribe, a new genus and two new species of Cydnidae (Hemiptera) from Pakistan with phylogenetic consideration. *Trans. Shikoku ent. Soc.*, 15: 1-9.
- AHMAD, I., MOIZUDDIN, M., KHAN, A.A. 1979. Generic and supergeneric keys with reference to a checklist of lower pentatomoid fauna of Pakistan (Heteroptera: Pentatomomorpha) with notes on their distribution and food plants. *Suppl. ent. Soc. Karachi*, 4 (4): 1-50.
- AMYOT, C.J.B., SERVILE, J.G.A. 1843. *Histoire naturelle des insectes. Hemipteres*. Paris: LXVII + 675 pp.
- ANONYMOUS. 1977. The biology and integrated control of the root bug *Stibaropus formosanus* (Ish. et Yan.). *Acta ent. sin.*, 20 (3): 276-278.

- ATKINSON, E.T. 1887. Notes on Indian Rhynchota: Heteroptera, No. 1. *J. asiat. Soc. Beng.*, 56: 22-61.
- BERGROTH, E. 1908. Enumeratio Pentatomidarum post catalogum bruxellensum descriptarum. *Mem. Soc. ent. Belg.*, 15: 131-200.
- BERGROTH, E. 1915. Hemiptera from the Bombay Presidency. *J. Bomb. nat. Hist. Soc.*, 24: 170-179.
- BERTINI, H. 1978. *Observations sur certains Hémiptères Cydnidae se nourrissant de graines de figues. Diplome d'études approfondies. Museum National d'Histoire Naturelle, Laboratoire d'Entomologie generale et applique.* Paris: 55pp.
- BHARGAVA, R.N., PRASAD, M. 1977. New records of Heteroptera (Insecta: Hemiptera) from North West India. *Sci. Cult.*, 43 (7): 329-330.
- BILLBERG, G.J. 1820. *Enumeratio insectorum in Museo G.J. Billberg.* 138pp.
- BLANCHARD, C.E. 1844. [in:] d'ORBIGNY. *Dictionnaire universel d'histoire naturelle*, 16 vols.
- BOX, H.E. 1953. *List of sugar-cane insects.* London: 101pp.
- BREDDIN, G. 1900. Hemiptera Sumatrana collecta a dom. Henrico Dohrn. *Ent. Ztg., Stettin*, 61: 275-336.
- BREDDIN, G. 1904. Rhynchoten aus Ameisen- und Termitenbauten. *Annls Soc. ent. Belg.*, 48: 407-416.
- BREDDIN, G. 1905. Rhynchota Heteroptera aus Java gesammelt von Prof. K. Kraepelin 1904. *Mitt. zool. Mus. Hambg.*, 22: 109-159.
- BREDDIN, G. 1906. Die Hemipteren von Celebes. Ein beitrage zur faunistik der Insel. *Abh. naturforsch. Ges. Halle*, 24: 1-215.
- BREDDIN, G. 1909. Rhynchoten von Ceylon gesammelt von Dr. Walter Horn. *Annls Soc. ent. Belg.*, 53: 250-309.
- BREDDIN, G. 1912. Neue indo-malayische Hemiptera. *Arch. Naturgesch.*, 78A (11): 95-107.
- BRULLÉ, M. 1838, *Insectes* [in:] BARKER-WEBB, P., BERTHELOT, S. *Histoire naturelle des Isles Canaries. Tome deuxié. 2e partie. Entomologie.* Paris: 119pp.
- BUCHANAN WHITE, F. 1877. Descriptions of new species of Heteropterous Hemiptera collected in the Hawaiian Islands by the Rev. T. Blackburn. *Ann. Mag. nat. Hist.*, (4) 20: 110-114.
- BURMEISTER, H. 1834. Rhyngota seu Hemiptera. *Nova Acta Acad. Caesar. Leop. Carol.*, 16: 285-308.
- CARAYON, J. 1974. Formes nouvelles d'endosymbiose ches les Hémiptères. *C.R. Acad. Sc. Paris, ser. D.*, 278: 1495-1498.
- CARVALHO, E.L. 1968-1969. Um novo Cydnideo Escaptocorinea Africano (Heteroptera, Cydnidae). *Bolm. Soc. port. Cienc. nat.*, 12 (2A): 223-226.
- CHANDRA, A. 1953. A systematic catalogue of the main identified entomological collection at the Forest Research Institute, Dehra Dun, Part 14. Order Hemiptera (in part) family Pentatomidae. *Indian Forest Leaff., Ent.*, 121 (3): 85-102.
- CHINA, W.E. 1935. The terrestrial Hemiptera of the German Limnological Sunda-Expedition. *Arch. Hydrobiol., Suppl.*, 14: 295-307.
- CHINA, W.E. 1943. The generic names of the British Hemiptera-Heteroptera, with a checklist of the British species. [in:] *The generic names of British Insects*, 8: 217-316.
- COSTA, A. 1853. Cimicum Regni Neapolitani, III-IV. *Atti Inst. Sci. nat. Cent.*, 3-77, VI-VIII.
- DALLAS, W. 1851. *List of specimens of Hemipterous insects in the collection of the British Museum.* London: 368pp.

- DISTANT, W.L. 1899a. Rhynchotal notes - Heteroptera: Plataspinæ, Thyreocorinæ and Cydninæ. *Ann. Mag. nat. Hist.*, (7) 4: 213-227.
- DISTANT, W.L. 1899b. Rhynchotal notes - Heteroptera: Correction. *Ann. Mag. nat. Hist.*, (7) 4: 442.
- DISTANT, W.L. 1900. Revision of the Rhynchota belonging to the family Pentatomidae in the Hope Collection at Oxford. *Proc. zool. Soc. London*, 1900: 807-825.
- DISTANT, W.L. 1901a. Enumeration of the Heteroptera (Rhynchota) collected by Signor Leonardo Fea in Burma and its vicinity. *Trans. ent. Soc. Lond.*, 1901: 99-114.
- DISTANT, W.L. 1901b. Contribution to the knowledge of the Rhynchota. *Trans. ent. Soc. Lond.*, 1901: 581-592.
- DISTANT, W.L. 1902. *Fauna of British India, including Ceylon and Burma. Rhynchota vol. 1.* London: 438pp.
- DISTANT, W.L. 1903. Anthropological and Zoological Results of an Expedition to Perak and the Siamese Malay States, 1901-1902. Report on the Rhynchota. Part I. Heteroptera. *Fasc. Malay., Zool.*, 2: 223-274.
- DISTANT, W.L. 1906. *Rhynchota* [in:] GARDINER, J.S., *The fauna and geography of the Maldive and Laccadive Archipelagoes, vol. II and supplements I and II.* Cambridge: 473-1079.
- DISTANT, W.L. 1908. *Fauna of British India, including Ceylon and Burma. Rhynchota vol. 4.* London: 501pp.
- DISTANT, W.L. 1913. The Percy Sladen Trust Expedition to the Indian Ocean in 1905. vol. 5. Rhynchota, part 1: suborder Heteroptera. *Trans. Linn. Soc. Lond.*, 16 (2): 139-191.
- DISTANT, W.L. 1918. *Fauna of British India, including Ceylon and Burma. Rhynchota vol. 7.* London: 210pp.
- DOHRN, A. 1859. *Catalogus Hemipterorum.* Stettin: 112pp.
- DOHRN, A. 1860. Zur Heteropteren-Fauna Ceylons's. *Ent. Ztg., Stettin*, 21: 399-409.
- DOLLING, W.R. 1981. A rationalized classification of the Burrower bugs (Cydnidae). *Syst. Ent.*, 6: 61-76.
- DUFOUR, L. 1834. Description et figures de trois Hémiptères Européens nouveaux ou mal connus. *Annls Soc. ent. Fr.*, (1) 3: 341-357.
- ELLENRIEDER, C.A.M. 1862. Eerste Bijdrage tot de Kennis der Hemipteren van den Indischen Archipel. *Nat. Tijdschr. Nederl. Ind.*, 24: 130-174.
- ESAKI, T. 1926. Verzeichnis der Hemiptera-Heteroptera der Insel Formosa. *Annls hist.-nat. Mus. natn. hung.*, 24: 136-189.
- ESAKI, T. 1950. *Hemiptera* [in:] *Iconographia Insectorum Japonicorum, Editio secunda, reformata.* Hokuryukan, Tokio: 179-384.
- ESAKI, T. 1959. *Hemiptera* [in:] *Iconographia Insectorum Japonicorum Colore naturali edita, vol. III.* Hokuryukan, Tokio: 358pp.
- ESAKI, T., ISHIHARA, T. 1951. Hemiptera of Shansi, North China. II. Pentatomoidea. *Mushi*, 22 (5): 22-44.
- FABRICIUS, J.C. 1775. *Systema entomologiae.* Flensburgi et Lipsiae: XXXII + 832pp.
- FABRICIUS, J.C. 1794. *Entomologia systematica emendata et aucta, tom IV. Hafniae:* VI + 175pp.
- FABRICIUS, J.C. 1798. *Supplementum Entomologiae Systematicae.* Hafniae: 572pp + 53pp.
- FABRICIUS, J.C. 1803. *Systema Rhyngotorum.* Brunsvigae: 335pp.
- FAITHFULL, I. 1987. Notes on the feeding habits of burrowing bugs of the genus *Adrisa* (Heteroptera: Cydnidae). *Aust. ent. Mag.*, 14 (3): 37-38.

- FIEBER, F.X. 1860. *Die europäischen Hemiptera. Halbflüger (Rhynchotha, Heteroptera), I-II*. Wien: 1-112.
- FIEBER, F.X. 1861. *Die europäischen Hemiptera. Halbflüger (Rhynchotha, Heteroptera), III*. Wien: 113-444.
- FÖRSTER, J.R. 1771. *Novae species insectorum*. Centuria I: viii+100pp.
- FROESCHNER, R.C. 1960a. Cydnidae of the Western Hemisphere. *Proc. U.S. natn. Mus.*, 111: 337-680.
- FROESCHNER, R.C. 1960b. Review of the Genus Katakadia Distant (Hemiptera: Cydnidae). *Ent. News*, 71: 249-254.
- FROESCHNER, R.C. 1967. The burrower bugs collected by the Noona Dan Expedition mainly in the Philippines and Bismarck Islands (Hemiptera, Cydnidae). *Ent. Meddel.*, 35: 11-22.
- FROESCHNER, R.C. 1975. Three new species of burrowing bugs found in association with ants in Brazil (Hemiptera: Cydnidae). *J. Kans. ent. Soc.*, 48 (1): 105-110.
- FROESCHNER, R.C. 1976. The burrowing bugs of Hawaii, with description of a new species (Hemiptera: Cydnidae). *Proc. Hawaii ent. Soc.*, 22: 229-236.
- FUENTE de la, J.A. 1972. Revision de los Pentatomidos Ibericos. Familia Cydnidae Billberg 1820. *Boll. R. Soc. esp. Hist. nat. (Biol.)*, 70: 33-78.
- GAEDIKE, H. 1971. Katalog der in den Sammlungen des ehemaligen Deutschen Entomologischen Institutes aufbewahrten Typen - V. Heteroptera. *Beitr. Ent.*, 21: 79-159.
- GHAURI, M.S.K., 1975. On a new subspecies of *Aethus laticollis* Wagner (Hemiptera: Heteroptera: Cydnidae) as a serious pest of *Pennisetum typhoides* (Burm.) in India. *J. Bomb. nat. Hist. Soc.*, 72 (1): 226-227.
- GIBSON-HILL, C.A. 1950. Hemiptera collected on the Cocos-Keeling Islands January-October 1941. *Bull. Raffl. Mus. Singapore*, 23: 206-211.
- GOEZE, J.A.E. 1778. *Entomologische Beytrage zu des Ritter Linne zwolften ausgabe des Natursystems, 2 Teil*. Leipzig: 352pp.
- HART, C.A. 1919. The Pentatomoidea of Illinois, with keys to the Nearctic genera. *Bull. Ill. State nat. Hist. Surv.*, 13 (7): 157-223.
- HASEGAWA, H. 1962. Heteroptera of Southeast Asia collected by the Osaka City University Biological Expedition to Southeast Asia 1957-58. *Nature and Life in Southeast Asia*, 2: 5-24.
- HOBERLANDT, L. 1960. Hemiptera-Heteroptera. Spedizione Italiana al Karakorum ed al Hindu-Kush (1954-1955). *Atti Mus. civ. Stor. nat. Trieste*, 22: 55-65.
- HOBERLANDT, L. 1984. Heteroptera of Afghanistan. Acanthosomatidae, Cydnidae, Scutelleridae and Pentatomidae. *Acta faun. ent. Mus. nat. Prag.*, 17: 69-128.
- HOFFMANN, W.E. 1931. Notes on Hemiptera and Homoptera at Canton, Kwantung Province, southern China. *Insect Pest Surv. Bull.*, 11 (3): 138-151.
- HORVÁTH, G. 1879. Hemiptera-Heteroptera a Dom. Joanne Xantus in China et in Japonia collecta. *Annls hist.-nat. Mus. natn. hung.*, 3: 141-152.
- HORVÁTH, G. 1889. Notes synonymiques et géographiques sur les Hémiptères Paléearctiques. *Revue Ent.*, 8: 325-331.
- HORVÁTH, G. 1911. Nomenclature des familles des Hémiptères. *Annls hist.-nat. Mus. natn. hung.*, 9: 1-34.
- HORVÁTH, G. 1919. Analecta ad cognitionem Cydnidarum. *Annls hist.-nat. Mus. natn. hung.*, 17: 205-273.
- HSIAO, T.Y., ZHENG, L.Y., REN, S.Z. 1977. *A handbook for the determination of the Chinese Hemiptera-Heteroptera, vol. 1*. Tientsin: 330pp.
- IKEMOTO T., ESHITA, Y., YAMAGUCHI, T., TAKAI, R., KURIHARA, T. 1976a. Bionomics of *Aethus indicus* (Westwood) (Hemiptera Cydnidae). I. On the habitat and life

- cycle. *Jap. J. sanit. zool.*, 27 (3): 231-238.
- IKEMOTO T., ESHITA, Y., YAMAGUCHI, T., TAKAI, R., KURIHARA, T. 1976b. Bionomics of *Aethus indicus* (Westwood) (Hemiptera Cydnidae). I. On the flight behaviour of adults and the analysis of factors inducing the activity. *Jap. J. sanit. zool.*, 27 (3): 239-246.
- IZZARD, R.J. 1936. The Hemiptera of Christmas Islands. *Ann. Mag. nat. Hist.*, (10) 17: 577-600.
- JACOBS, D.H. 1989. A new species of *Thaumastella* with notes on the morphology, biology and distribution of the two southern African species (Heteroptera: Thaumastellidae). *J. ent. Soc. S. Afr.*, 52 (2): 301-316.
- JAKOVLEV, B.E. 1876. Materials to the fauna of the European Russia. IV. Notes on the geographical distribution of Hemiptera Heteroptera. *Trudy russ. ent. Obshch.*, 8: 46-82.
- JAKOVLEV, B.E. 1885. Hemiptera Heteroptera aus Achal-Tekke. *Trudy russ. ent. Obshch.*, 19 (1-2): 98-129.
- JOSIFOV, M., KERZHNER, I.M. 1978. Heteroptera aus Korea. II Teil. (Aradidae, Berytidae, Lygaeidae, Pyrrhocoridae, Rhopalidae, Alydidae, Coreidae, Urostylidae, Acanthosomatidae, Scutelleridae, Pentatomidae, Cydnidae, Plataspididae). *Fragm. faun.*, 23: 137-196.
- KANYUKOVA, E.V. 1988. 35. Fam. Cydnidae - Burrowing Bugs. *Opriedielitiel' Nasekomykh Dalnogo Vostoka SSR, Leningrad*: 915-918.
- KERZHNER, I.M. 1964. Materials on the synonymy of shieldbugs (Heteroptera, Pentatomoidea) in the fauna of the USSR and of adjacent countries. *Ent. Obozr.*, 43 (2): 363-367.
- KIRBY, W.F. 1891. Catalogue of the described Heteroptera and Homoptera of Ceylon, based on the collection formed (chiefly at Pundaloya) by Mr. E. Ernest Green. *J. linn. Soc., Zool.*, 149/150: 72-176.
- KIRBY, W.F. 1900. *Hemiptera* [in]: ANDREWS, C.W. *A Monograph of Christmas Islands (Indian Ocean)*. London: 338pp.
- KIRKALDY, G.W. 1905. Memoir on the Rhynchota collected by Dr. Arthur Willey F.R.S., chiefly in Birara (New Britain) and Lifu. *Trans. R. ent. Soc. Lond.*, 1905: 327-364.
- KIRKALDY, G.W. 1908. Notes on some Sinhalese Hemiptera. *Annls Soc. ent. Belg.*, 52: 9-16.
- KIRKALDY, G.W. 1910a. A list of the Hemiptera of Oriental China. Part II. *Annls Soc. ent. Belg.*, 54: 103-112.
- KIRKALDY, G.W. 1910b. On some preoccupied generic names in insects. *Can. Ent.*, 42: 8.
- KLUG, F. 1845. *Insecta V.* [in:] EHRENBURG, C.G., *Symbolae physicae seu icones et descriptiones insectorum*. Berolini: [without page numbering].
- KOBAYASHI, T. 1964. Developmental stages of *Geotomus pygmaeus* (Dallas) and *Sehirus niveimarginatus* (Scott) (Cydnidae). *Kontyu*, 32: 21-27.
- KOBAYASHI, T. 1974. A note on *Aethus indicus* (Westwood) and *Geotomus pygmaeus* (Dallas) in Ishigahi Island. *Rostria*, 23: 123.
- KUMAR, R. 1962. Morpho-taxonomical studies on the genitalia and salivary glands of some Pentatomoidea. *Ent. Tidsk.*, 83: 45-89.
- LETHIERRY, L. 1889. Liste des Hémiptères recueillis a Sumatra & dans l'île Nias par Mr. E. Modigliani. *Annali Mus. civ. Stor. nat. Giacomo Doria*, 2 (6): 460-470.
- LETHIERRY, L. 1891. Note sur les Hémiptères du Bengale. *Bull. C.R. Soc. ent. Belg.*, (IV) 17: CXLI-CXLV.

- LETHIERRY, L., SEVERIN, G. 1893. *Catalogue général des Hémiptères, tome I. Hétéroptères. Pentatomidae*. Bruxelles: 286pp.
- LIN, Y., ZHANG, S. 1992. Hemiptera: Plataspidae, Cydnidae [in:] *Iconography of forest insects in Hunan China. Hemiptera*: 215-305.
- LINNAVUORI, R. 1977. Hemiptera of the Sudan, with remarks on some species of the adjacent countries. 5. Tingidae, Piesmididae, Cydnidae, Thaumastellidae and Plataspidae. *Acta zool. fenn.*, 147: 1-81.
- LINNAVUORI, R.E. 1986. Heteroptera of Saudi Arabia. *Fauna of Saudi Arabia*, 8: 31-197.
- LINNAVUORI, R.E. 1989. Heteroptera of Yemen and South Yemen. *Acta ent. fenn.*, 54: 1-40.
- LINNAVUORI, R.E. 1993. Cydnidae of West, Central and North-East Africa (Heteroptera). *Acta zool. fenn.*, 192: 1-148.
- LIS, J.A. 1990a. Studies on the Oriental Cydnidae. I. A revision of the genus *Scoparipes* Signoret, 1879 (Heteroptera). *Ann. Upper Siles. Mus., Ent.*, 1: 159-192.
- LIS, J.A. 1990b. Studies on the Oriental Cydnidae (Heteroptera) II. Three new genera and species. *Bonn. zool. Beitr.*, 41: 223-229.
- LIS, J.A. 1991a. Studies on Oriental Cydnidae. III. On the genus *Peltoxys* Signoret, 1880 (Heteroptera: Pentatomoidea). *Genus, Wroclaw*, 2 (1): 19-25.
- LIS, J.A. 1991b. Studies on Oriental Cydnidae. IV. New species, new synonyms and new records (Heteroptera). *Ann. Upper Siles. Mus., Ent.*, 2: 165-190.
- LIS, J.A. 1991c. Studies on Oriental Cydnidae. V. Three new species of the genus *Macroscytus* Fieber (Heteroptera). *Ann. Upper Siles. Mus., Ent.*, 2: 209-215.
- LIS, J.A. 1991d. *Scoparipes* Signoret, 1880 (Insecta, Heteroptera): proposed confirmation of *Cydnus latipes* Westwood, 1837 as the type species. *Bull. zool. Nomencl.*, 48 (3): 215-216.
- LIS, J.A. 1991e. Studies on Oriental Cydnidae. VI. A contribution to the fauna of Sulawesi (Celebes) (Heteroptera: Pentatomoidea). *Genus, Wroclaw*, 2 (4): 299-311.
- LIS, J.A. 1991f. Studies on Oriental Cydnidae. VII. On *Stibaropus* Dallas and *Pseudostibaropus* n. gen. (Heteroptera: Pentatomoidea). *Genus, Wroclaw*, 2 (4): 313-325.
- LIS, J.A. 1991g. *Schiodtella secunda* n. sp., a new species of burrowing bugs from Palaearctic China (Heteroptera: Cydnidae: Scaptocorinae). *Genus, Wroclaw*, 2 (1): 27-31.
- LIS, J.A. 1992a. Studies on Oriental Cydnidae. IX. On the genus *Adrisa* Amyot and Serville, 1843 (Heteroptera: Pentatomoidea). *Genus, Wroclaw*, 3 (1): 13-27.
- LIS, J.A. 1992b. On *Garsauria aradoides* Walker and *G. laosana* Lis (Heteroptera: Cydnidae). *Ann. Upper Siles. Mus., Ent.*, 3: 147-150.
- LIS, J.A. 1993a. A review of the tribe Amaurocorini E. Wagner, with remarks on its systematic position within the family (Heteroptera: Cydnidae). *Ann. Upper Siles. Mus., Ent.*, 4: 59-78.
- LIS, J.A. 1993b. On *Byrsinus* Fieber and *Microporus* Uhler, two allied cydnid genera (Heteroptera: Cydnidae). *Ann. Upper Siles. Mus., Ent.*, 4: 79-98.
- LIS, J.A. 1993c. Studies on Cydnidae of the Australian Region II. A review of New Guinean species of the genus *Chilocoris* Mayr (Heteroptera: Pentatomoidea). *Ann. Upper Siles. Mus., Ent.*, 4: 25-40.
- LIS, J.A. 1993d. Studies on Oriental Cydnidae. VIII. On *Aethus indicus* (Westwood), *A. philippinensis* Dallas and *A. pseudindicus* n.sp. (Heteroptera: Pentatomoidea). *Genus, Wroclaw*, 4 (2): 103-111.
- LIS, J.A. 1994. A description of *Parachilocoris minutus japonicus* nov. subspec.,



- and some changes in the nomenclature of East Palaearctic burrower bugs (Heteroptera: Cydnidae). *Ent. Ber., Amst.*, 54: 113-116.
- MATSUMURA, S. 1913. *Illustrated thousand Insects of Japan. Addit. I*: 117.
- MAXWELL-LEFROY, H. 1909. The insect fauna of Tirhut I. Rhynchota Heteroptera. *Rec. Indian Mus.*, 3: 301-338.
- MAXWELL-LEFROY, H., HOWLETT, F.M. 1909. *Indian insect life. A manual of the insects of the plains*. Calcutta, London: 786pp.
- MAYR, G.L. 1864. Diagnosen neuer Hemipteren. *Verh. k. k. zool.-bot. Ges. Wien*, 14: 903-914.
- MAYR, G.L. 1866. Diagnosen neuer Hemipteren III. *Verh. k. k. zool.-bot. Ges. Wien*, 16: 361-366.
- MAYR, G.L. 1868. *Hemiptera Heteroptera* [in:] *Reise der Österreichischen Fregatte Novara um die Erde, Zool. Theil, Zweiter Band. II, 1 Abth.* Wien: 204pp.
- MILLER, N.C.E. 1931. *Geotomus pygmaeus* Dallas (Heteroptera-Cydnidae) attempting to suck human blood. *Entomologist*, 64: 214.
- MILLER, N.C.E. 1971. *The biology of the Heteroptera. 2nd Ed.* Hampton, Middlesex: 206pp.
- MOIZUDDIN, M., AHMAD, I. 1985. Eggs and nymphal systematics of *Macroscytus subaeneus* (Dallas) (Pentatomoidea: Cydnidae) of Pakistan with reference to phylogeny. *Karachi Univ. J. Sci.*, 13 (2): 163-169.
- MOIZUDDIN, M., AHMAD, I. 1990. A revision of Cydnidae (Hemiptera: Pentatomomorpha: Pentatomoidea) from Indo-Pakistan area with a cladistic analysis of the included genera. *Oriental Insects*, 24: 305-354.
- MONTROUZIER, X. 1858. Description de quelques Hémiptères de la Nouvelle Calédonie. *Annls Soc. linn. Lyon*, 5: 243-263.
- MULSANT, E., REY, C. 1866. *Histoire naturelle des Punaises de France, Péntatomides*. Paris: 372pp.
- NOUALHIER, M. 1893. Voyage de M. Ch. Alluaud aux îles Canaries, 2-me memoire. Hémipteres Gymnocerates et Hydrocorises. *Annls Soc. ent. Fr.*, 62 : 5-18.
- OPINION 1707. 1993. *Scoparipes Signoret, 1880* (Insecta, Heteroptera): *Cydnus latipes* Westwood, 1837 confirmed as the type species. *Bull. zool. Nomencl.*, 50 (1): 74.
- OSHANIN, V. 1906. Verzeichnis der Palaearktischen Hemipteren mit besonderer Berücksichtigung ihrer Verteilung im Russischen Reiche. I. Band. Heteroptera. I. Lieferung. Pentatomidae-Lygaeidae. *Beil. Ann. Mus. zool. Acad. Saint Petersburg.*, 11 (1): 1-393.
- PAIVA, C.A. 1907. Records of Hemiptera and Hymenoptera from the Himalayas. *Rec. Indian Mus.*, 1: 13-20.
- PAIVA, C.A. 1918. Rhynchota from Barkuda Island. *Rec. Indian Mus.*, 15: 1-16.
- PAIVA, C.A. 1919. Rhynchota from the Garo Hills, Assam. *Rec. Indian Mus.*, 16: 349-377.
- PAWAR, A.A. 1973. New records of Pentatomoidea (Hemiptera) from Sri Lanka. *Ent. News*, 84: 211-216.
- PERTY, J.A.M. 1830-1834. *Delectus animalium articulorum, quae in itinere per Brasiliam annis 1817-1820 ...*[viii.] iii+264pp.
- PUTON, A. 1886. *Enumeration des Hémiptères recueillis en Tunisie en 1883 et 1884 par M.M. Valéry Mayet et Maurice Sedillot. Exploration Scientifique de la Tunisie*: 24pp.
- PUTON, A. 1887. Hémiptères nouveaux de l'Algérie. *Revue Ent.*, 6: 298-311.
- PUTON, A. 1889. Descriptions des espèces nouvelles [in:] NOUALHIER, M. Excursion Hémiptérologiques a Ténériffe et a Madère. *Revue Ent.*, 1889: 298-310.

- RUCKES, H. 1963. Heteroptera: Pentatomoidea [in:] *Insects Micronesia*, 7 (7): 307-356.
- SANDHU, G.S., DEOL, G.S. 1976. New records of pest on wheat. *Indian J. Ent.*, 37: 85-86.
- SCHAEFER, C.W. 1981. The sound-producing structures of some primitive Pentatomoidea (Hemiptera: Heteroptera). *N.Y. ent. Soc.*, 88: 230-235.
- SCHAEFER, C.W. 1988. The food plants of some "primitive" Pentatomoidea (Hemiptera: Heteroptera). *Phytophaga*, 2: 19-45.
- SCHAEFER, C.W. 1993. The Pentatomomorpha (Hemiptera: Heteroptera): an annotated outline of its systematic history. *Eur. J. Entomol.*, 90: 105-122.
- SCHAEFER, C.W., DOLLING, W.R., TACHIKAWA, S. 1988. The shieldbug genus *Parastrachia* and its position within the Pentatomoidea (Insecta: Hemiptera). *Zool. J. linn. Soc.*, 93: 283-311.
- SCHAEFER, C.W., ZHENG, L.Y., TACHIKAWA, S. 1991. A review of *Parastrachia* (Hemiptera: Cydnidae: Parastrachiinae). *Oriental Insects*, 25: 131-144.
- SCHJØDTE, J.C. 1847. Om en gruppe af gravende Cimicies. *Naturh. Tidsskr.*, 2 (2): 447-464.
- SCHJØDTE, J.C. 1843. Forhandlinger i det Skandinaviske entomologiske Gelskab. Modet den 9de November. *Naturh. Tidsskr.*, 4: 327-337.
- SCHOUTEDEN, H. 1905. Note sur le Genre *Garsauria* Wk. *Annls Soc. ent. Belg.*, 49: 49-51.
- SCHOUTEDEN, H. 1909. Notes on the Pentatomidae (Hemiptera Heteroptera) described by Dr. Snellen van Vollenhoven. *Notes Leyden Mus.*, 30: 33-46.
- SCHOUTEDEN, H. 1933. Resultats scientifiques du voyage aux Indes Orientales Néerlandaises de LL. AA. RR. le Prince et la Princesse Leopold de Belgique. Hemipteres-Heteropteres. *Mem. Mus. r. Hist. nat. Belg.*, 4 (8): 43-70.
- SCOTT, J. 1874. On a collection of Hemiptera Heteroptera from Japan. Descriptions of various new genera and species. *Ann. Mag. nat. Hist.*, (4) 14: 289-304.
- SCOTT, J. 1880. On a collection of Hemiptera from Japan. *Trans. ent. Soc. Lond.*, 4: 305-317.
- SIGNORET, V. 1865. Descriptions de quelques Hemipteres nouveaux. *Annls Soc. ent. Fr.*, 4 (5): 115-130.
- SIGNORET, V. 1880. [Note]. *Annls Soc. ent. Fr., Bull. ent.*, 5 (9): CLXXII-CLXXIII.
- SIGNORET, V. 1881a. Revue des Cydnides contenus dans la collection du Musee Civique d'Histoire Naturelle de Genes. *Annali Mus. civ. Stor. nat. Giacomo Doria*, 16: 621-657.
- SIGNORET, V. 1881b. [Note]. *Annls Soc. ent. Fr., Bull. ent.*, 5 (10): VII-VIII.
- SIGNORET, V. 1881c. [Note]. *Annls Soc. ent. Fr., Bull. ent.*, 5 (10): XXXIII-XXXIV.
- SIGNORET, V. 1881d. Revision du groupe des Cydnides de la famille des Pentatomides. Partie 1. *Annls Soc. ent. Fr.*, 6 (1): 25-52.
- SIGNORET, V. 1881e. Revision du groupe des Cydnides de la famille des Pentatomides. Partie 2. *Annls Soc. ent. Fr.*, 6 (1): 193-218.
- SIGNORET, V. 1881f. [Note]. *Annls Soc. ent. Fr., Bull. ent.*, 5 (10): CXXXVI.
- SIGNORET, V. 1882a. [Note]. *Annls Soc. ent. Fr., Bull. ent.*, 6 (1): XXVIII-XXIX.
- SIGNORET, V. 1882b. [Note]. *Annls Soc. ent. Fr., Bull. ent.*, 6 (1): CLVI-CLVIII.
- SIGNORET, V. 1882c. Revision du groupe des Cydnides de la famille des Pentatomides. Partie 5. *Annls Soc. ent. Fr.*, 6 (2): 23-42.
- SIGNORET, V. 1882d. Revision du groupe des Cydnides de la famille des Pentatomides. Partie 6. *Annls Soc. ent. Fr.*, 6 (2): 145-168.
- SIGNORET, V. 1882e. Revision du groupe des Cydnides de la famille des Pentatomides. Partie 7. *Annls Soc. ent. Fr.*, 6 (2): 241-266.

- SIGNORET, V. 1883a. Revision du groupe des Cydnides de la famille des Pentatomides, 8 parte. *Annls Soc. ent. Fr.*, 6 (2): 465-484.
- SIGNORET, V. 1883b. [Note]. *Annls Soc. ent. Fr., Bull. ent.*, 6 (2): LXIII-LXIV.
- SIGNORET, V. 1883c. Revision du groupe des Cydnides de la famille des Pentatomides. Partie 9. *Annls Soc. ent. Fr.*, 6 (3): 33-60.
- SIGNORET, V. 1883d. Revision du groupe des Cydnides de la famille des Pentatomides. Partie 10. *Annls Soc. ent. Fr.*, 6 (3): 207-220.
- SIGNORET, V. 1883e. Revision du groupe des Cydnides de la famille des Pentatomides. Partie 11. *Annls Soc. ent. Fr.*, 6 (3): 357-374.
- SIGNORET, V. 1884a. Revision du groupe des Cydnides de la famille Pentatomides. 12 partie. *Annls Soc. ent. Fr.*, 6 (3): 517-534.
- SIGNORET, V. 1884b. Revision du groupe des Cydnides de la famille Pentatomides. 13 et dernière partie. *Annls Soc. ent. Fr.*, 6 (4): 45-128.
- SINGH, S., GUPTA, V.K., MATHEW, K., KRISHNA, S.S. 1955. Entomological survey of the Himalayas. Part XII. Second annotated check-list of insects from the North-West (Punjab) Himalayas. *Agra Univ. J. Res., Suppl.*, 4: 657-716.
- SORAUER, P. 1956. *Handbuch der Pflanzenkrankheiten. Tierische Schädlinge an Nutzpflanzen. 2 Teil. 3 Lieferung. Heteroptera, Homoptera I. Teil.* Berlin und Hamburg: 399pp.
- STAL, C. 1854. Nya Hemiptera. *Öfv. Kongl. Vet.-Akad. Forh.*, 11: 231-255.
- STAL, C. 1864. *Hemiptera Africana* I. Holmiae: 256pp.
- STAL, C. 1868. Hemiptera Fabriciana 1. *K. svenska VetenskAkad. Handl.*, 7 (11): 3-148.
- STAL, C. 1869. Hemiptera Fabriciana 2. *K. svenska VetenskAkad. Handl.*, 8 (1): 3-130.
- STAL, C. 1870. Hemiptera insularum Philippinarum. *Öfv. Kongl. Vet.-Akad. Forh.*, 7 (1): 607-776.
- STAL, C. 1876. Enumeratio Hemipterorum, pt. 5. *K. svenska VetenskAkad. Handl.*, 14: 1-162.
- STICHEL, W. 1962. *Illustrierte Bestimmungstabellen der Wanzen II. Europa (Hemiptera-Heteroptera Europae). Volumen 4. 24. Heft. Liste der Palaearktischen Arten, Pentatomomorpha II.* Berlin-Hermsdorf: 708-779.
- ŠTUSÁK, J.M. 1991. A new giant burrowing bug from Viet-Nam (Insecta, Heteroptera: Cydnidae). *Reichenbachia, Dresden*, 28: 117-121.
- SYNAVE, H. 1969. Liste du material typique conserve dans les collections entomologiques de l'Institut Royal des Sciences Naturelles de Belgique. Hemiptera 23-25. Cydnidae, Pentatomidae, Gelastocoridae. *Bull. Inst. r. Sci. nat. Belg.*, 45 (37): 1-21.
- TAKAI, R., YAMAGUCHI, T., KURIHARA, T. 1975. Mass occurence of *Aethus indicus* (Hem. Cydnidae, Heter.) as a house frequenting pest in the Amami Islands (Japan). *Jap. J. sanit. zool.*, 26 (1): 61-63.
- TAKAKURA, Y. 1985. *Garsauria aradoides* collected from Kyushu, Japan. *Rostria*, 37: 518.
- TAKANO, S., YANAGIHARA, M. 1939. Researches on injurious and beneficial animals of sugarcane. *Taiwan Sugar expt. Stat., Extra Rept.*, 2: 1-311.
- TAKARA, T., HIDAKA, T. 1960. Provisional list of Hemiptera-Heteroptera in the Ryukyus Islands. Supplemental Notes 1. *Sc. Bull. Div. Agric., Home Econ. Eng., Univ. Ryukyus*, 7: 181-188.
- TAKENOUCHI, Y., MURAMOTO, N. 1968. A survey of the chromosomes in twenty-three species of Heteropteran insects. *J. Hokkaido Univ. Educat. (Sect. II B)*, 19: 1-19.
- TAKENOUCHI, Y., MURAMOTO, N. 1969. Chromosome numbers of Heteroptera. *J.*

- Hokkaido Univ. Educat. (Sect. II B), 20: 1-15.
- TOMOKUNI, M. 1979. The Pentatomoid Fauna of the Kii Peninsula. *Mem. nat. Sci. Mus., Tokyo*, 12: 103-111.
- TOMOKUNI, M. 1981. Heteroptera of the Izu Peninsula, Central Japan. *Mem. nat. Sci. Mus., Tokyo*, 14: 103-116.
- TOMOKUNI, M. 1982. First record of *Garsauria aradoides* Walker from Japan (Cydnidae). *Rostria*, 34: 414.
- TOMOKUNI, M. 1985. Heteroptera of the Oki Islands, Shimane Prefecture, Japan. *Mem. nat. Sci. Mus., Tokyo*, 18: 153-161.
- TOMOKUNI, M. 1989. Heteroptera (Insecta) of the Amami Islands, the Ryukyus, Japan. I. Pentatomomorpha. *Mem. nat. Sci. Mus., Tokyo*, 22: 185-195.
- TOMOKUNI, M. 1992. A new record of *Lactistes falcolipes* Hsiao (Heteroptera, Cydnidae) from Japan. *Jpn. J. Ent.*, 60 (2): 358.
- TOXOPEUS, L.J. 1924. A short description of the localities on the island Buru, in the Moluccas, where zoological collections were made during scientific expeditions in 1921 and 1922. *Tijdschr. Kon. Ned. Aardrij. Genootsch.*, 41: 1-11.
- UHLER, P.R. 1861. Hemiptera of the North-Pacific Exploring Expedition under Com'rs Rodgers and Ringgold. *Proc. Acad. nat. Sci. Philad.*, 12: 221-231.
- UHLER, P.R. 1872. Notices of the Hemiptera of the Western territories of the United States. Prelim. *U.S. Geol. Surv. Montana, 5th Ann. Rep. U.S. Geol. Geogr. Surv. Terr.*: 392-423.
- UHLER, P.R. 1876. List of Hemiptera of the region west of the Mississippi River. *Bull. U.S. Geol. Geogr. Surv. Terr.*, 1: 269-361.
- UHLER, P.R. 1877. Report on the insects collected P.R. Uhler during the explorations of 1875. *Bull. U.S. Geol. Geogr. Surv. Terr.*, 3: 355-475, 765-801.
- VAN DUZEE, E.P. 1914. Nomenclatorial and critical notes on Hemiptera. *Can. Ent.*, 46: 377-389.
- VOLLENHOVEN, S.C.S. 1868a. Diagnosen van eenige nieuwe soorten van Hemiptera Heteroptera. *Versl. Meded. K. Akad. Wetens., Afd. Natuurk.*, 2: 172-188.
- VOLLENHOVEN, S.C.S. 1868b. *Eassai d'une faune entomologique de l'archipel indo-néerlandais. Famille des Pentatomides*, 3. La Haye: 49pp.
- WAGNER, E. 1963. Untersuchungen ueber den Taxonomischen Wert des Baues der Genitalien bei den Cydnidae (Hem. Het.). *Acta ent. Mus. nat. Prag.*, 35: 73-115.
- WAGNER, E. 1964. Die Gattung *Byrsinus* Fieber, 1860 und einige verwandte gattungen (Heteroptera, Cydnidae). *Reichenbachia, Dresden*, 3 (3): 75-96.
- WALKER, F. 1867. *Catalogue of the specimens of Hemiptera Heteroptera in the collection of the British Museum*, vol. 1. London: 240pp.
- WALKER, F. 1868. *Catalogue of the specimens of Hemiptera Heteroptera in the collection of the British Museum*, vol. 3. London: 419-599pp.
- WALKER, F. 1873. *Catalogue of Hemiptera Heteroptera in the British Museum. Supplement*. London: 63pp.
- WEBER, H. 1930. *Biologie der Hemipteren*. Berlin: 543pp.
- WESTWOOD, J.O. 1837. *A catalogue of Hemiptera in the collection of the Rev. F.W. Hope, with short latin descriptions of the new species*. London: 46pp.
- WILBRINK, G. 1912. Die kedirische wortelwants. *Meded. Proefst. Java-Suikerind.*, 22: 1111-1123.
- WU, C.F. 1933. A preliminary checklist of Hemiptera heretofore recorded from Kwantung Province, South China. *Lingnan Sci. J.*, 12: 203-231.
- WU, C.F. 1935. *Catalogus insectorum sinensium* vol. 2. *Fan. Mem. Inst. Biol., Peiping*: 634 pp.
- ZIMMERMAN, E.C. 1948. *Heteroptera. Insects of Hawaii*, vol. 3. Honolulu: 255pp.

# INDEX OF TAXA

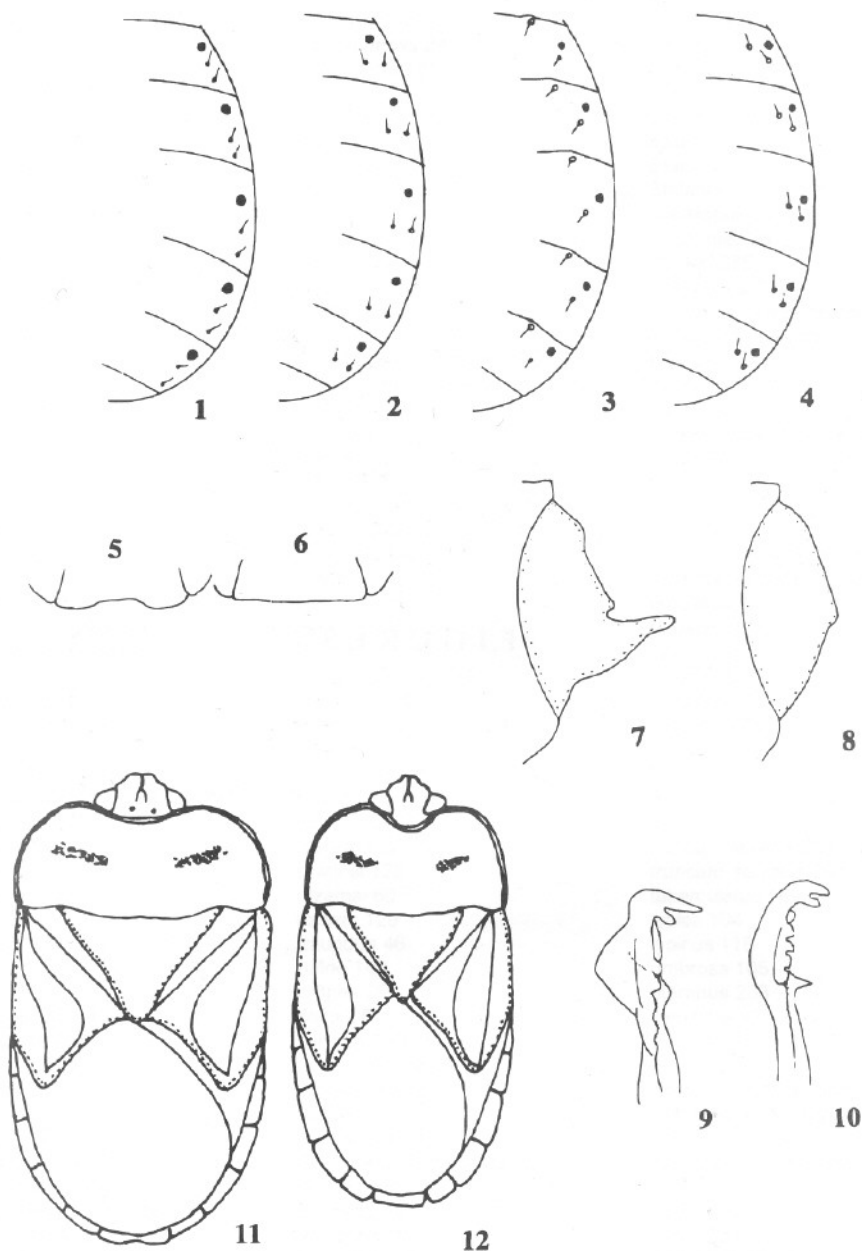
(synonyms in *italics*)

- abdominalis* 158  
*Acatalectus* 122  
 acrostictus 156  
 adelphus 54  
 Adrisa 122  
 aequalis 212  
 Aethiellus (*Pseudoscoparipes*) 252  
 Aethoscytus 134  
 Aethus 138  
 affinis 267  
 ajmericus 249  
 Alonips 154  
 Amaurocorini 41  
 Amaurocoris 42  
*Amnestoides* 52  
 Amnestoides (*Chilocoris*) 53  
 apicalis 158  
 aradoides 15  
*aspericollis* 44  
 assmuthi 78  
*ater* 167  
 aterrimus 101  
 badius 236  
 baloni 135  
 barbaraee 80  
 Barbaraethus (*Geotomus*) 191  
*beccarii* 16  
*bengalensis* 148  
 biimpressus 175  
 biliranus 82  
*bipunctatum* 165  
*bipunctatus* (*Aethus*) 165  
*bipunctatus* (*Macroscytus*) 214  
 birmana 132  
 birmanus (*Chilocoris*) 65  
*birmanus* (*Geotomus*) 158  
 birmanus (*Pseudoscoparipes*) 253  
*blissiformis* 118  
 borneensis (*Cydnius*) 102  
 borneensis (*Macroscytus*) 215  
 borneensis (*Parachilocoris*) 107  
 borrei 140  
 bosmansii 83  
*Brachysolen* 173  
*breviceps* 176  
*breviguttulus* 46  
 brevipennis 116  
 brunneus (*Chilocoris*) 66  
 brunneus (*Macroscytus*) 238  
*brunneus* (*Stibaropus*) 36  
 Byrsinus 163  
 caliginosa 197  
 callidus 33  
 campbelli 84  
 celebensis 217  
 Centrostephus 50  
 Cephaloctenini 20  
 Cephaloctenus 21  
*ceylonicus* (*Cydnius*) 149  
 ceylonicus (*Scoparipoides*) 278  
 Chilocoris 52, 63  
 chinensis 203  
 clara 124  
 coiminatoricus 194  
 convexus 193  
 conviva 262  
 costatus 55  
*cryptocephalus* 197  
 curtus 42  
 curviductus 279  
 Cydninae 49  
 Cydnini 49  
 Cydnopeltus 94  
 Cydnus 100  
*cyrtomenoides* 166  
 dalawanus 218  
*discolor* 166  
 dispar 108  
 dissimilis 263  
 dominiqueae 219  
*Drupadia* 103  
 duffelsi 84  
*electus* 245  
 Eolactistes (*Lactistes*) 199  
*erebus* 116  
*Eurycoris* 42  
 Euscoparipes (*Scoparipes*) 266  
 expansus 236  
 falcipipes 204  
*flavidus* 23  
 flavirostris 176  
 formosanus 26  
 foveolus 136  
 franzi 56  
*fraterculus* (*Macroscytus*) 221  
 fraterculus (*Pseudoscoparipes*) 254  
 Fromundiellus 169  
 Fromundus 173  
*fusca* 44  
*fusco-niger* 247  
 Gampsotes 187  
 Garsauria 16  
 Garsaurinae 15  
 Geobia 122  
 Geopeltus 189  
 Geotomini 120  
 Geotomus 190, 193  
*germanus* 245  
*Hahnia* 209  
 heissi 57  
*Heurnius* 115  
*Hispidocydnus* 43  
 hildegardeae 195  
 himalayensis 255  
*horvathi* 95  
 horvathii 95  
 impunctatus 177  
 incisus 96  
 incomptus 86  
 indicus (*Aethus*) 141  
 indicus (*Chilocoris*) 58  
 indonesicus 35  
*insignis* (*Cyrtomenus*) 268  
 insignis (*Scoparipes*) 268  
 islamabadensis 145  
 japonensis 221  
 javanus (*Macroscytus*) 239  
 javanus (*Stibaropus*) 27  
*jucundus* 181  
*karachiensis* 165  
 karlaicus 146  
 Katakadia 196  
 kinabalensis 256  
 Lactistes 198, 202  
 lansbergi 243  
 laosana 17  
 laosanus 270  
*laticeps* (*Amaurocoris*) 42  
 laticeps (*Microporus*) 245  
*laticollis* 167  
 latipes (*Scoparipes*) 264  
*latipes* (*Scoparipes*) 263  
 latus 205  
*lethierryi* 181  
 Linospa 43  
 longicephalus 67  
*longirostris* (*Lactistes*) 201  
*longirostris* (*Macroscytus*) 201  
 longirostris (*Scoparipes*) 271  
 luzonicus (*Cydnopeltus*) 98  
 luzonicus (*Parachilocoris*) 109  
*macroevaporatorium* 182  
*macroevaporatorius* 182  
*Macroporus* 52  
 Macroscytus 209  
 magna 125  
 major 47  
 mariani 110  
 martensi 67

- maurus 170  
*maxima* 125  
 mediator 200  
 melonothoides 21  
*membranaceus* 78  
*membranus* 78  
 meracula 120  
*microevaporatorium* 160  
*microevaporatorius* 160  
 Microporus 244  
*Microrhynchus* 16  
 minor (Chilocoris) 68  
*minor* (*Geotomus*) 156  
 minor (*Scoparipes*) 272  
*minor* (*Stibaropus*) 33  
 minutus (*Lactistes*) 206  
 minutus (*Parachilocoris*) 111  
 mirabilis 161  
 molginus 36  
 montanus 69  
 mumba 147  
 muticus 70  
*nanulus* 181  
 navus 112  
*Neostibaropus* 24  
 nepalensis (*Aethus*) 148  
 nepalensis (*Chilocoris*) 71  
*niger* 42  
*nigra* (*Adrisa*) 127  
*nigra* (*Scutellochoris*) 42  
*nigratus* 192  
 nigritus (*Microporus*) 247  
 nigritus (*Pseudoscoparipes*) 257  
 nigroaeneus 241  
 nilgircus 251  
*niponensis* 221  
 Nishadana 103  
*nitens* 181  
 nitidicollis 133  
 nitidulus 72  
 nitidus 73  
 niveimarginatus 47  
 noonadanae 223  
*oblongatus* 175  
 obscurus 258  
*omicron* 167  
 opacellus 178  
*opacus* (*Brachysolen*) 178  
*opacus* (*Fromundus*) 179  
*opacus* (*Geotomus*) 178  
*Opatrocynus* 196  
 orbicularis 44  
*orientalis* (*Aethus*) 167  
*orientalis* (*Ochetostethus*) 48  
 Orientocynus (*Cynus*) 102  
*Pachycnemis* 24  
*pallidicornis* 181  
 pallidus 165  
 Parachilocoris 106  
 Paraethus 248  
 parallelus 188  
 parumpunctatus 51  
 pauli 59  
 Peltoxys 115  
 perpunctatus 192  
 peshawarensis 172  
 pfeifferi 224  
*Philapodemus* 209  
 philippinensis (*Aethus*) 149  
 philippinensis (*Chilocoris*) 75  
 piceus 87  
 pilosulus 165  
 politus 272  
 popovi 225  
*Psammozetus* (*Cynus*) 163  
 pseudindicus 151  
 pseudinsignis 273  
 pseudominor 38  
 pseudopacus 180  
 pseudopiceus 89  
 Pseudoscoparipes 250, 251  
 Pseudostibaropus 23  
*pubescens* 116  
 Pullneya 119  
 pusillus 90  
*Putonisca* 163  
 pygmaeus 181  
*rarociliatus* 181  
 rastellus 207  
 rawlini 128  
 ritzamai 60  
 romani 129  
 rotundus 46  
*ruffino* 149  
 rufipes 265  
*saitoi* 26  
 salvazai 274  
 Scaptocorinae 19  
 Scaptocorini 22  
 schaeferi 258  
*Schiodtella* 24  
 Schiodtella (*Stibaropus*) 25  
 Scoparipes 261, 262  
 Scoparipoides 277  
*scutellaris* 165  
 scutellatus 279  
*Scutellochoris* 42  
 secundus 137  
 Sehirinae 40  
 Sehirini 45  
 semialbidus 114  
 similis 61  
*snelleni* 259  
*solenopsidis* 114  
*Statanus* 52  
 Statanus (*Chilocoris*) 77  
 Stibaropus 24, 32  
 struempeli 28  
 stygius 275  
 subaeneus 227  
*subglaber* (*Amaurocoris*) 42  
 subglaber (*Stibaropus*) 29  
 subitus 276  
 subrotundus 162  
*subtristis* 181  
 sulawesicus (*Chilocoris*) 62  
 sulawesicus (*Cynopeltus*) 99  
 sulcatus 91  
 sumatrana 130  
 sumatranus (*Chilocoris*) 91  
 sumatranus (*Macroscytus*) 228  
 sumatranus (*Stibaropus*) 39  
 tabulatus 30  
 taiwanicus 162  
 tanna 153  
 tenasserimus 230  
*terginus* 33  
 testaceus 23  
 thaicus 76  
*transversus* (*Acatalectus*) 232  
*transversus* (*Macroscytus*) 231  
*tristis* 101  
 truncatoserratus 201  
*truncato-serratus* 201  
 tuberculatus 189  
 typica 104  
 typicus 118  
 umbrosa 105  
 utaranus 233  
 vanstallei 92  
 varians 166  
*vicinus* 207  
 vietnamicus (*Macroscytus*) 234  
 vietnamicus (*Microporus*) 247  
*vollenhoveni* (*Aethus*) 259  
 vollenhoveni (*Pseudoscoparipes*) 259  
 wallacei 93  
 yangi 280  
 yunnanus (*Aethus*) 154  
 yunnanus (*Geotomus*) 170



## FIGURES



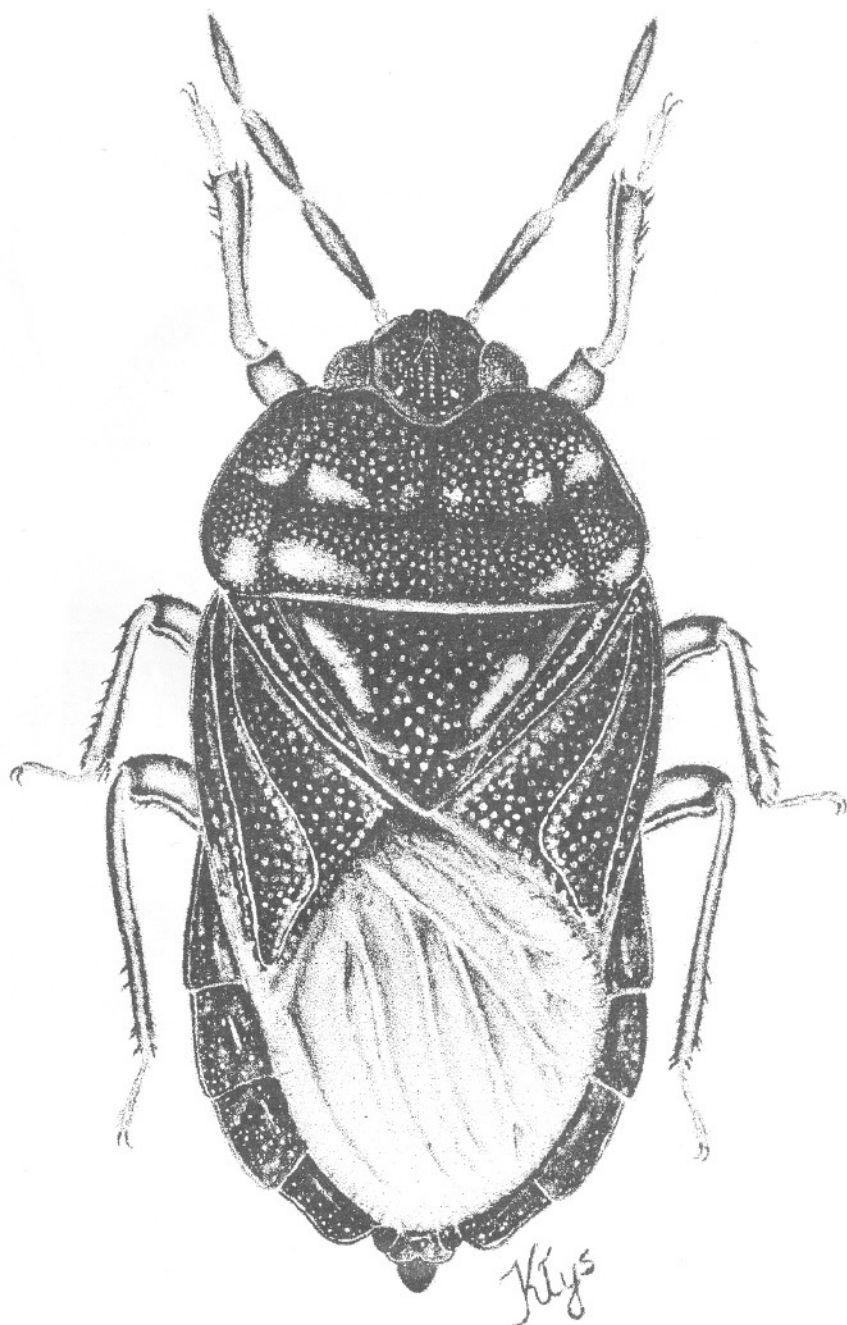
1-4. Arrangement of trichobothria; 5,7,9,11. *Garsauria laosana*;

6,8,10,12. *Garsauria aradoides*:

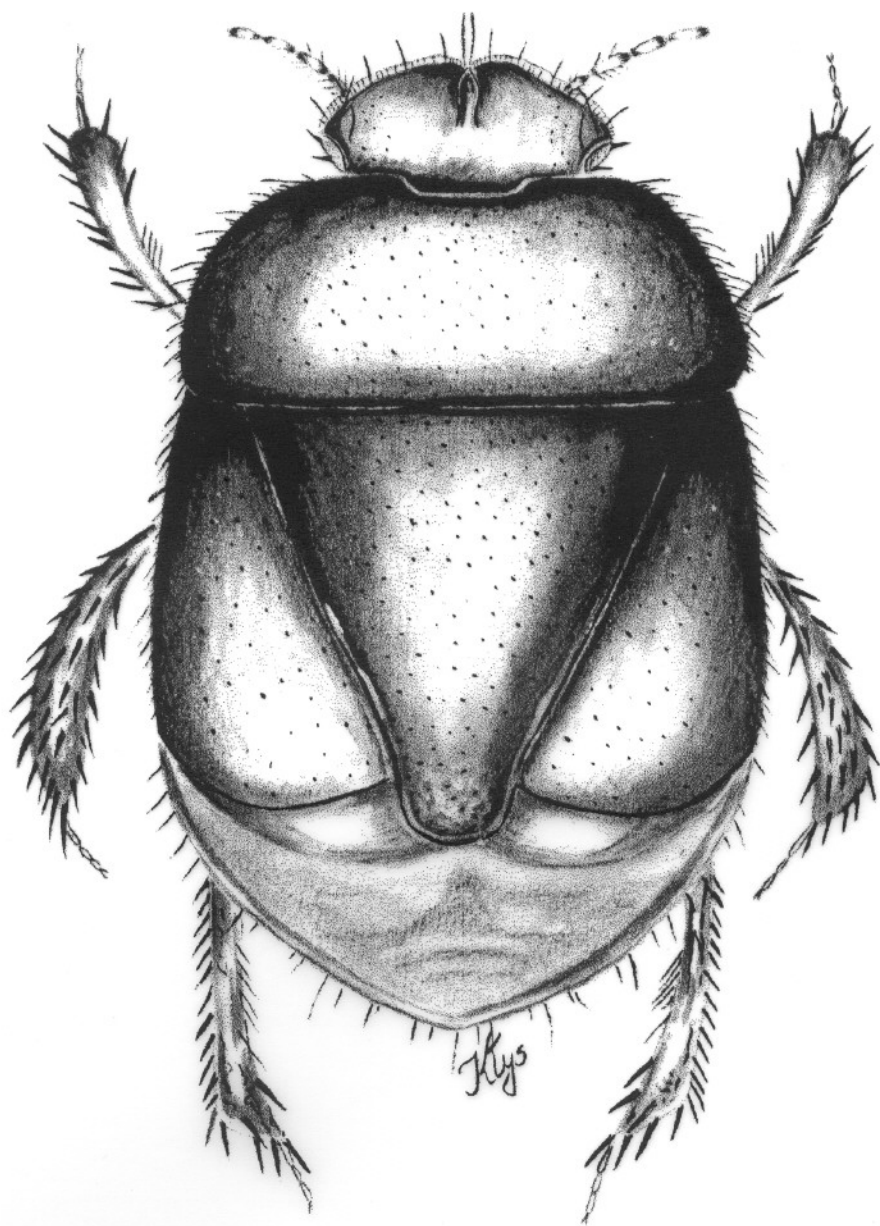
1 - *Garsauriinae*, 2 - *Sehirinae*, 3 - *Scaptocorinae*, 4 - *Cydninae*, 5-6 - female genital segment (dorsal view), 7-8 - male genital capsule (lateral view), 9-10 - paramere (front view),

11-12 - general body outline.

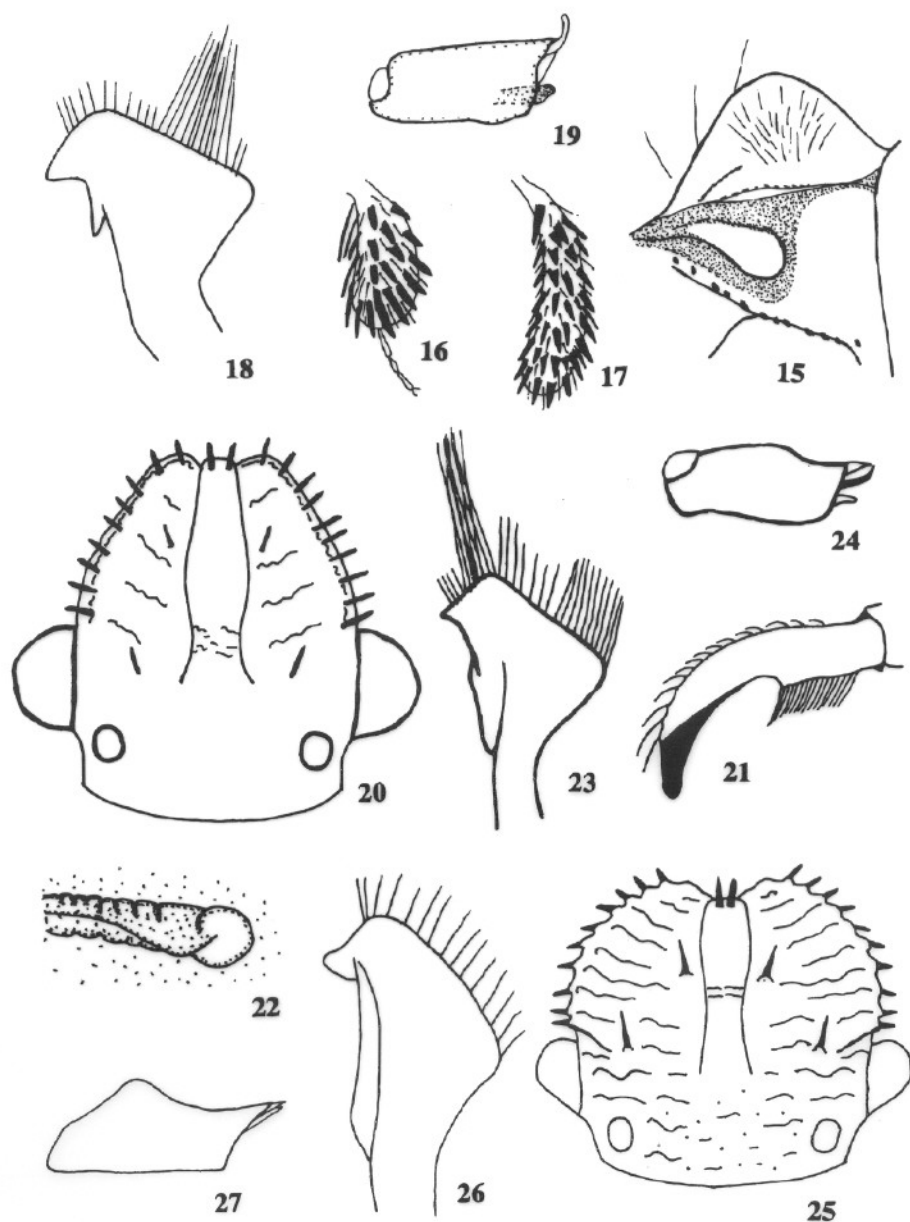
(Figs. 5-10 from Lis, 1992b, figs. 11-12 from Lis, 1991b).



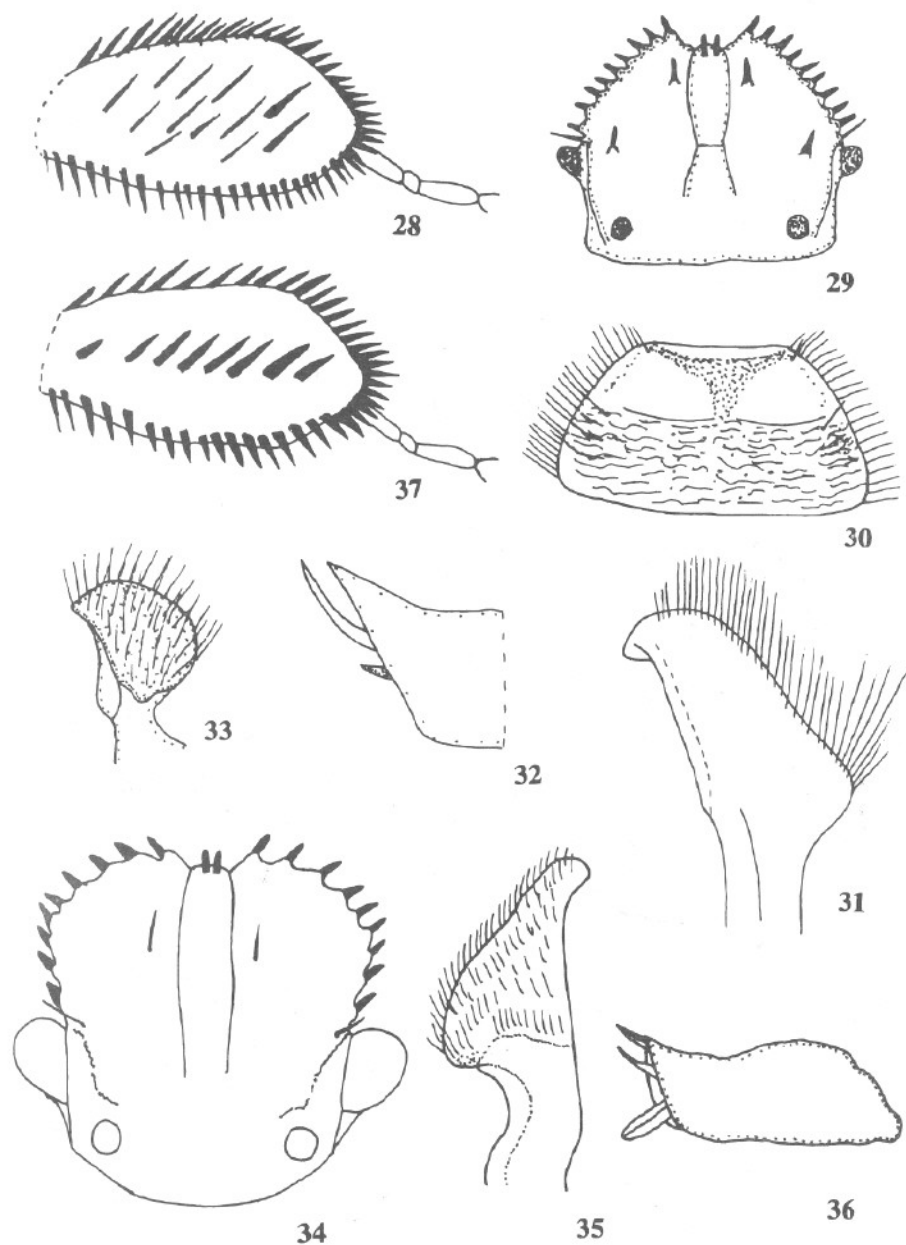
13. *Garsauria laosana* - general habitus, dorsal view.



14. *Cephaloctenus melolonthoides* - general habitus, dorsal view.

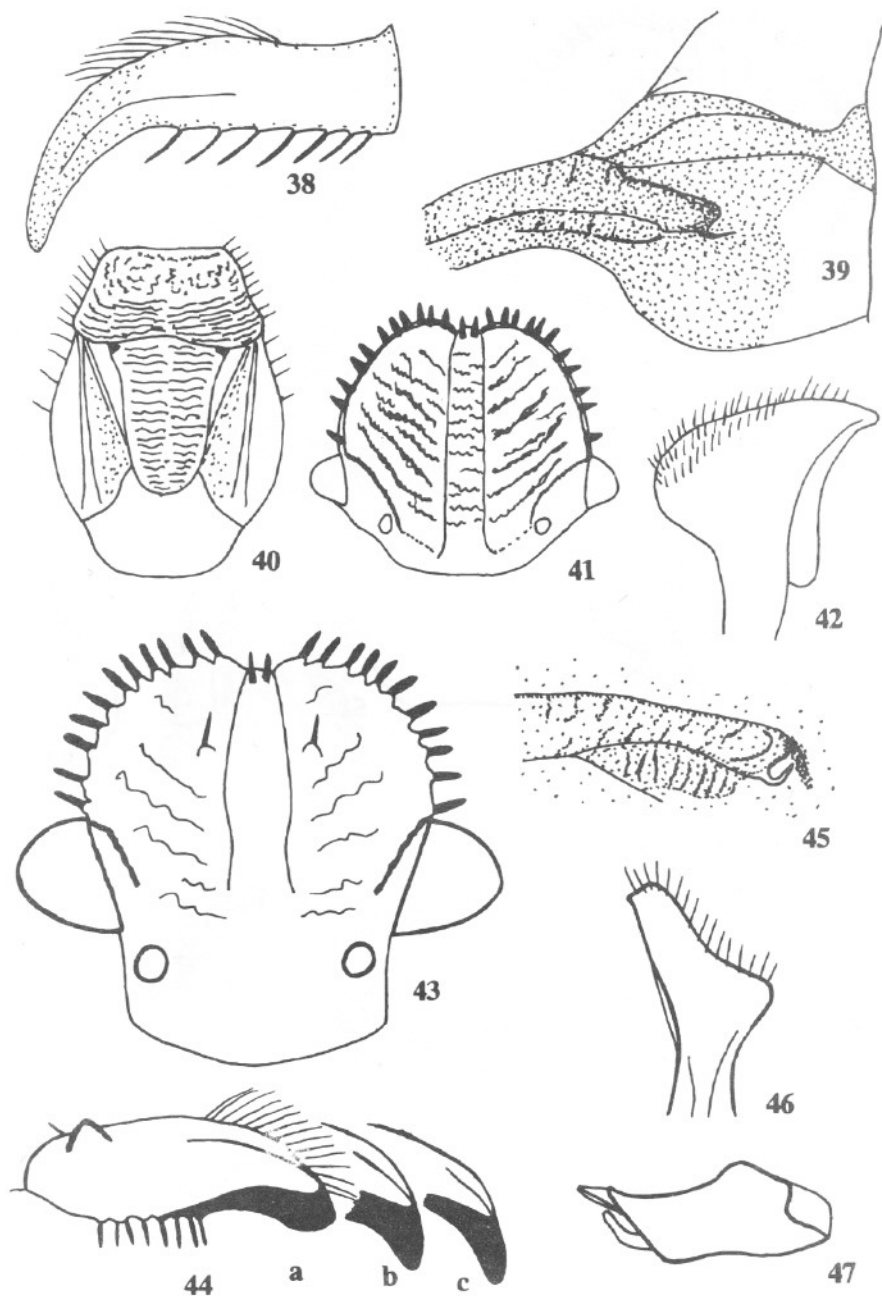


15-19. *Cephaloctenus melolonthoides*; 20-24. *Pseudostibaropus testaceus*; 25. *Stibaropus formosanus*; 26-27. *Stibaropus javanus*:  
 15 - evaporatoria, 16 - middle tibia, 17 - posterior tibia, 18, 23, 26 - paramere, 19, 24, 27 - penis, 20, 25 - head, 21 - anterior tibia, 22 - apex of peritreme  
 (Figs. 20-24 from LIS, 1991f).

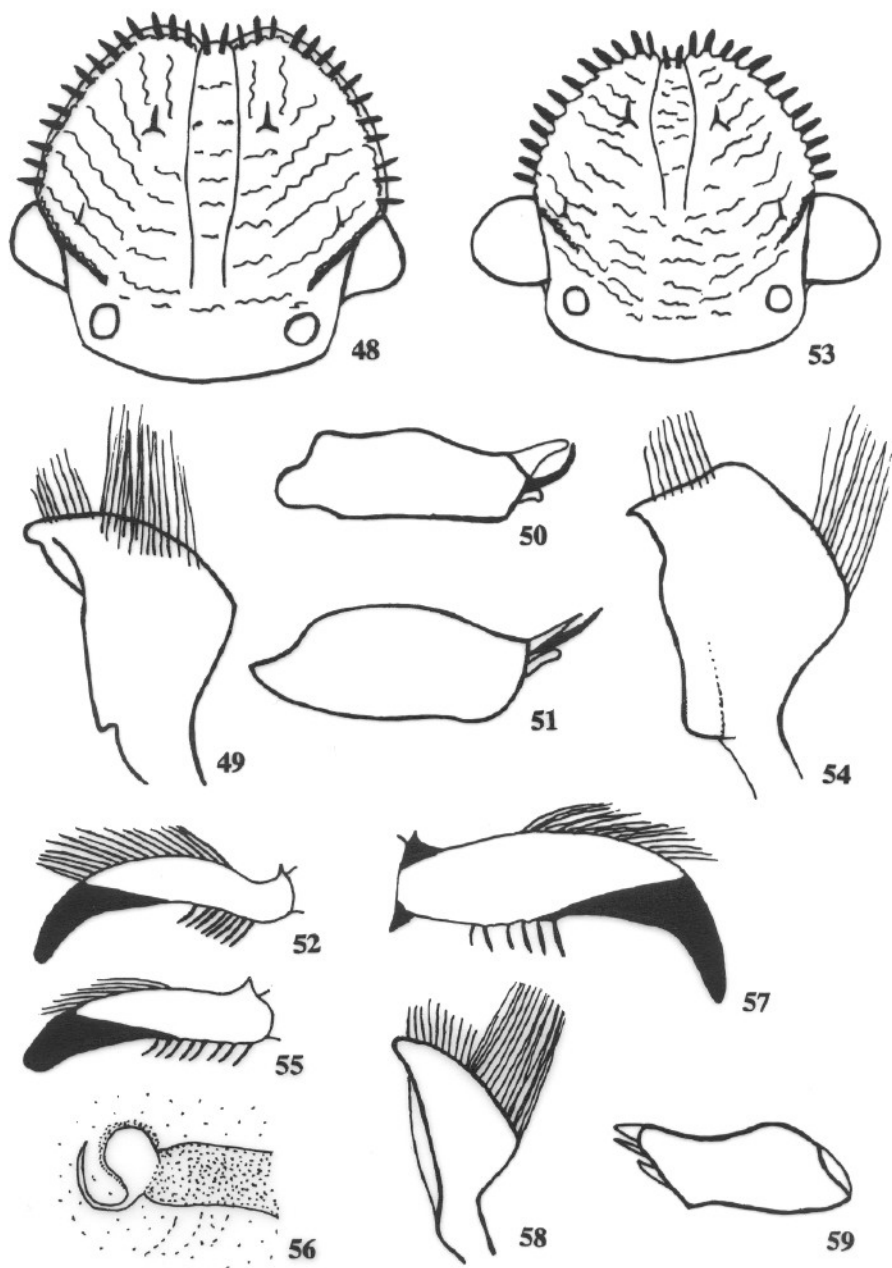


28. *Stibaropus javanus*; 29-32. *Stibaropus struempeli*; 33. *Stibaropus secundus*;  
 34-37. *Stibaropus subglaber*.  
 28, 37 - corbicle of posterior tibia, 29, 34 - head, 30 - pronotum, 31, 33, 35 - paramere, 32 - apical part of  
 penis, 36 - penis.  
 (Fig. 33 from Lis, 1991g, figs. 35-36 from Lis, 1991b).





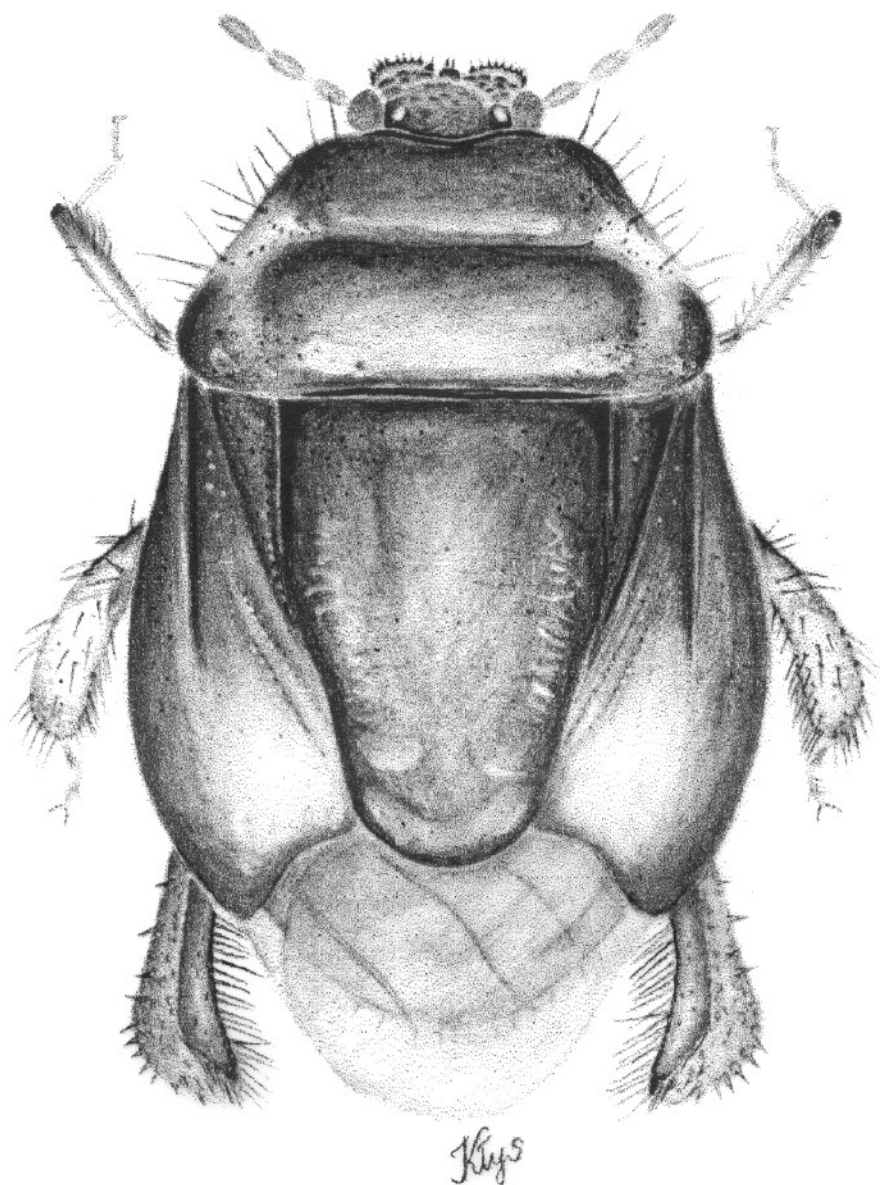
38-39. *Stibaropus subglaber*, 40-42. *Stibaropus tabulatus*; 43-47. *Stibaropus callidus*:  
 38,44 - anterior tibia (a,b,c - shape variability), 39 - evaporatoria, 40 - pronotum and scutellum, 41,43 -  
 head, 42,46 - paramere, 45 - peritreme, 47 - penis.  
 (Figs. 43-47 from LIS, 1991f).



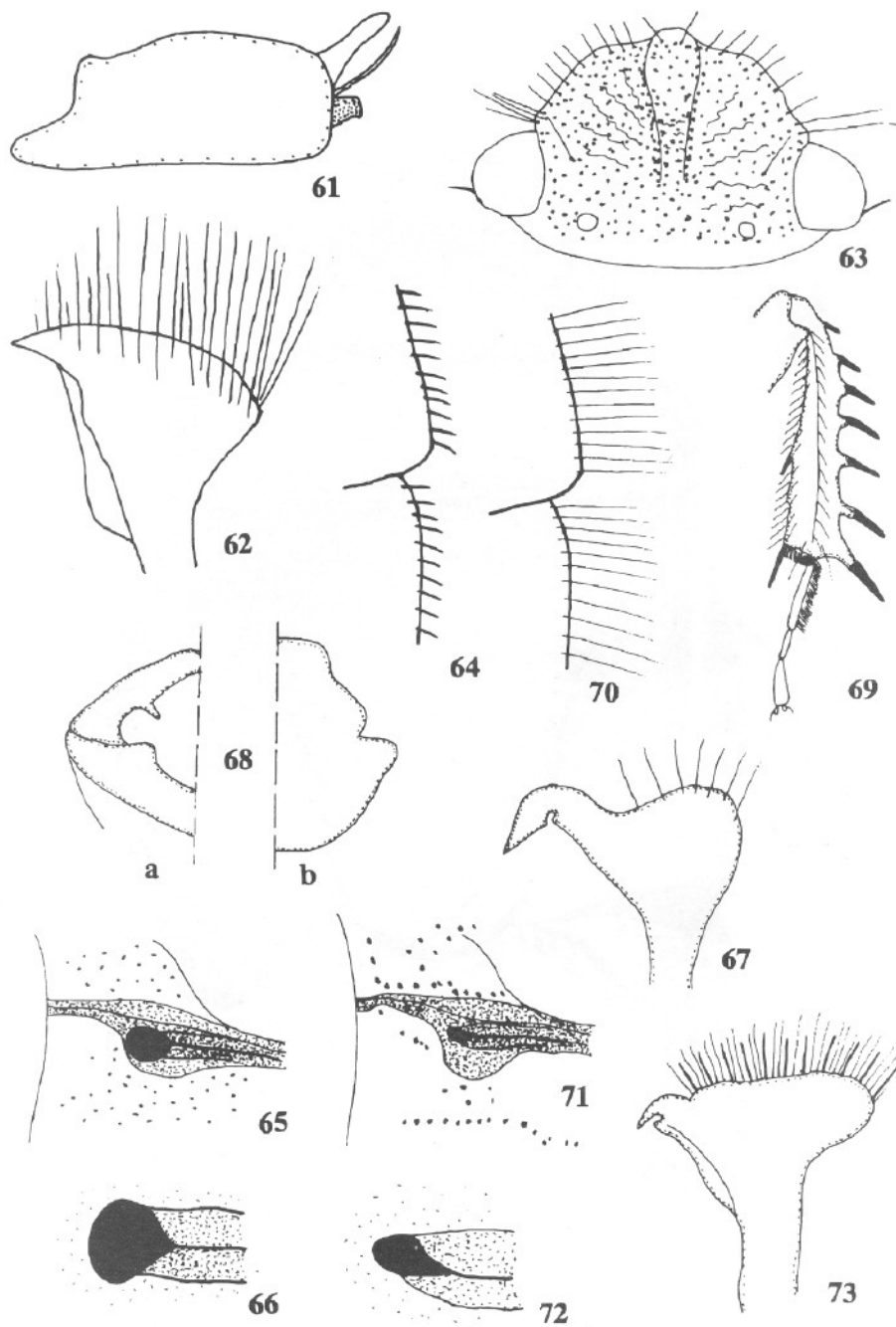
48-50,52. *Stibaropus indonesicus*; 51,53-56. *Stibaropus molginus*;

57-59. *Stibaropus pseudominor*.

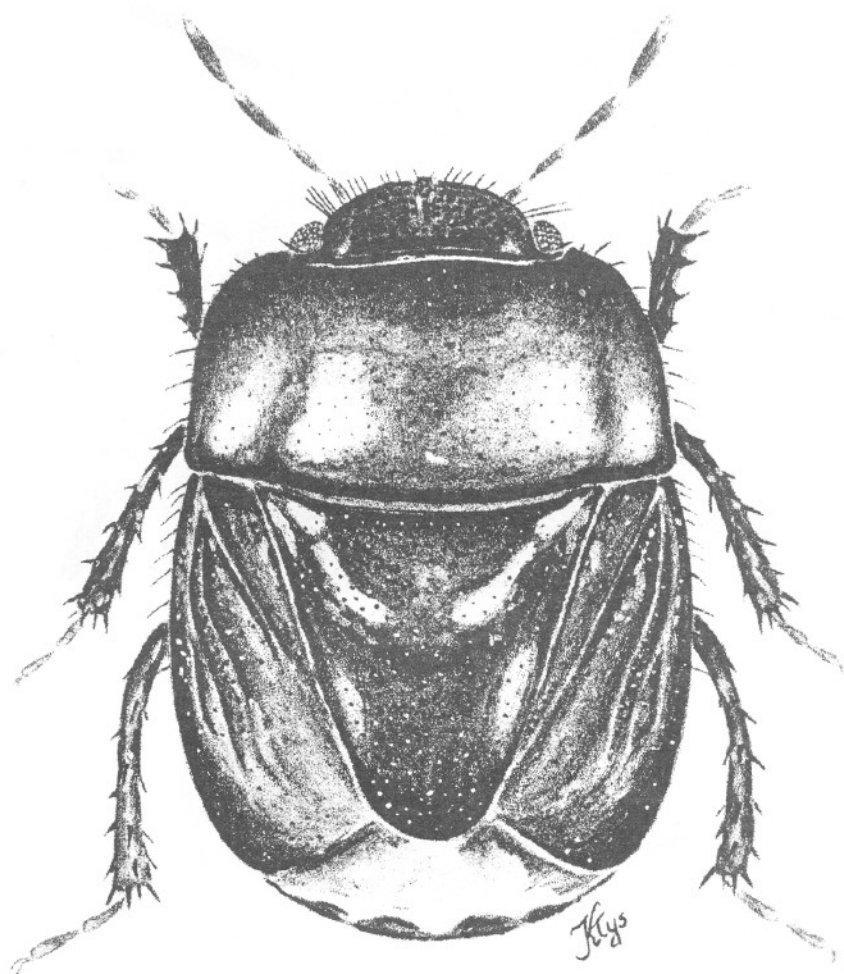
48,53 - head, 49,54,58 - paramere, 50,51,59 - penis, 52,55,57 - anterior tibia, 56 - apex of peritreme.  
(Figs. 48-59 from Lis, 1991f).



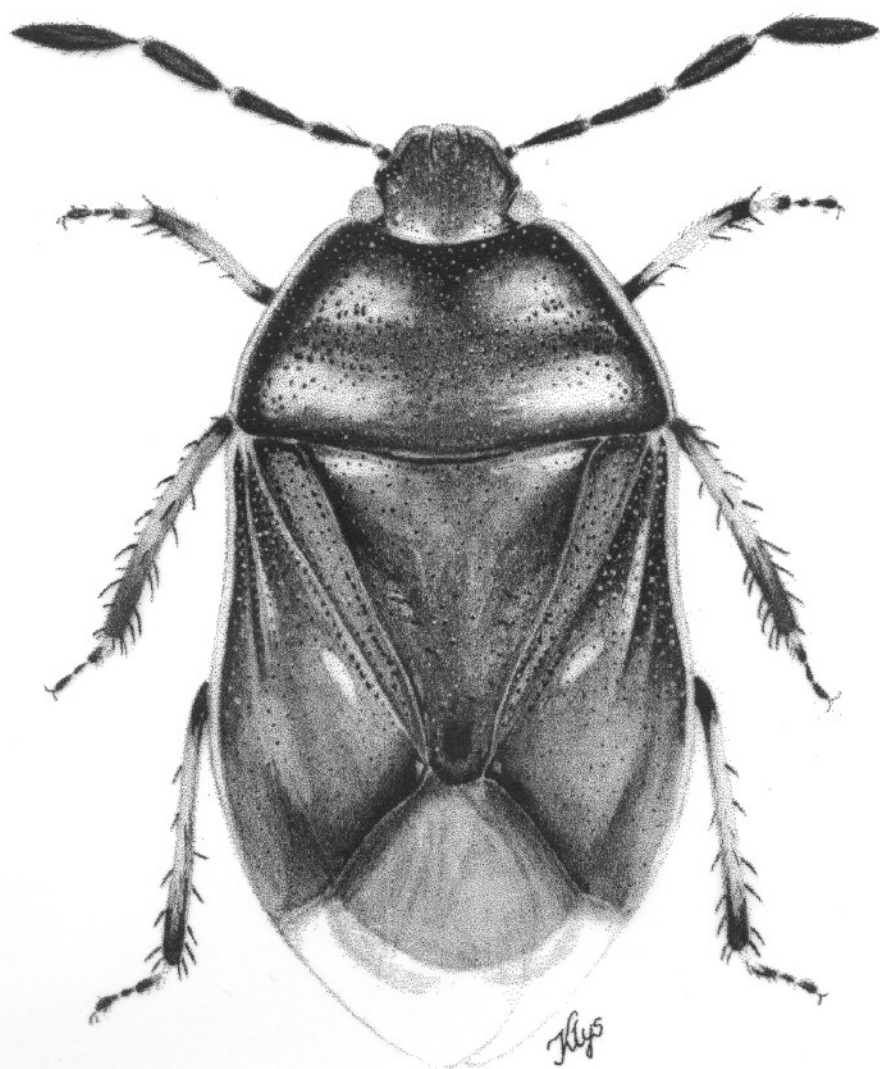
60. *Stibaropus pseudominor* - general habitus, dorsal view.



61-62. *Stibaropus sumatranus*; 63-68. *Amaurocoris curtus*; 69-73. *Linospa orbicularis*:  
 61 - penis, 62, 67, 73 - paramere, 63 - head, 64, 70 - margin of pronotum and costa, 65, 71 - evaporatoria,  
 66, 72 - apex of peritreme, 68 - male genital capsule (a - dorsal view, b - lateral view), 69 - anterior tibia.  
 (Figs. 63-73 from Lis, 1993a).

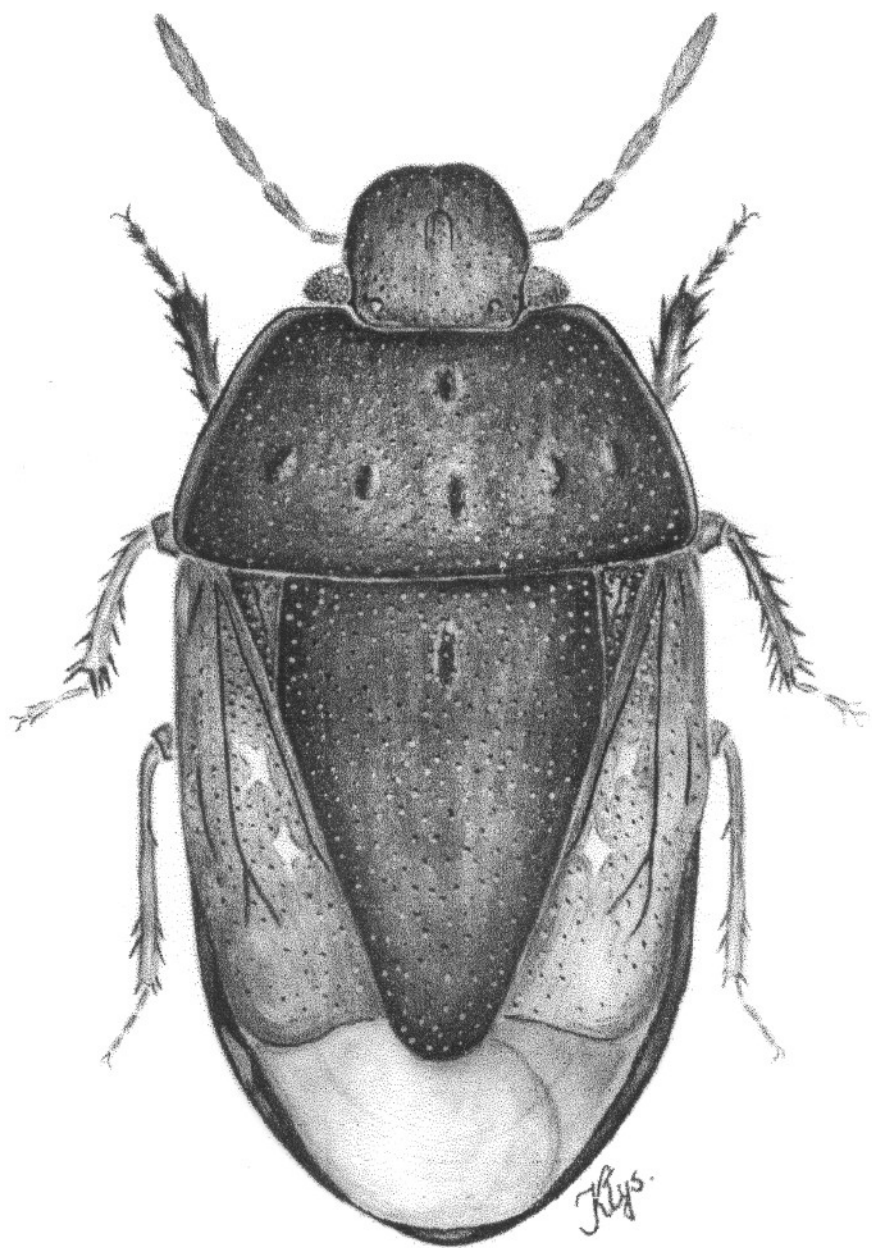


74. *Amaurocoris curtus* - general habitus, dorsal view.

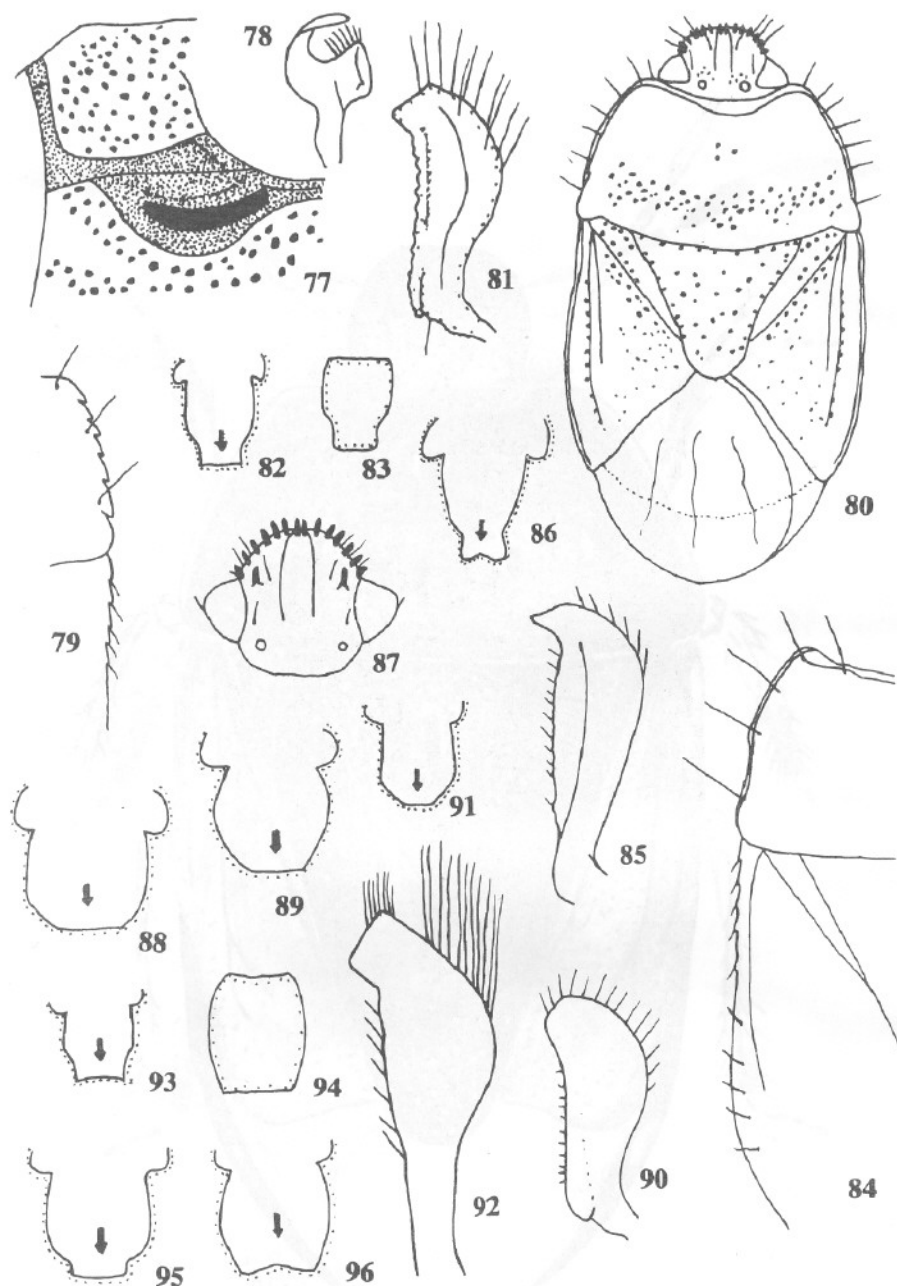


75. *Adomerus rotundus* - general habitus, dorsal view.





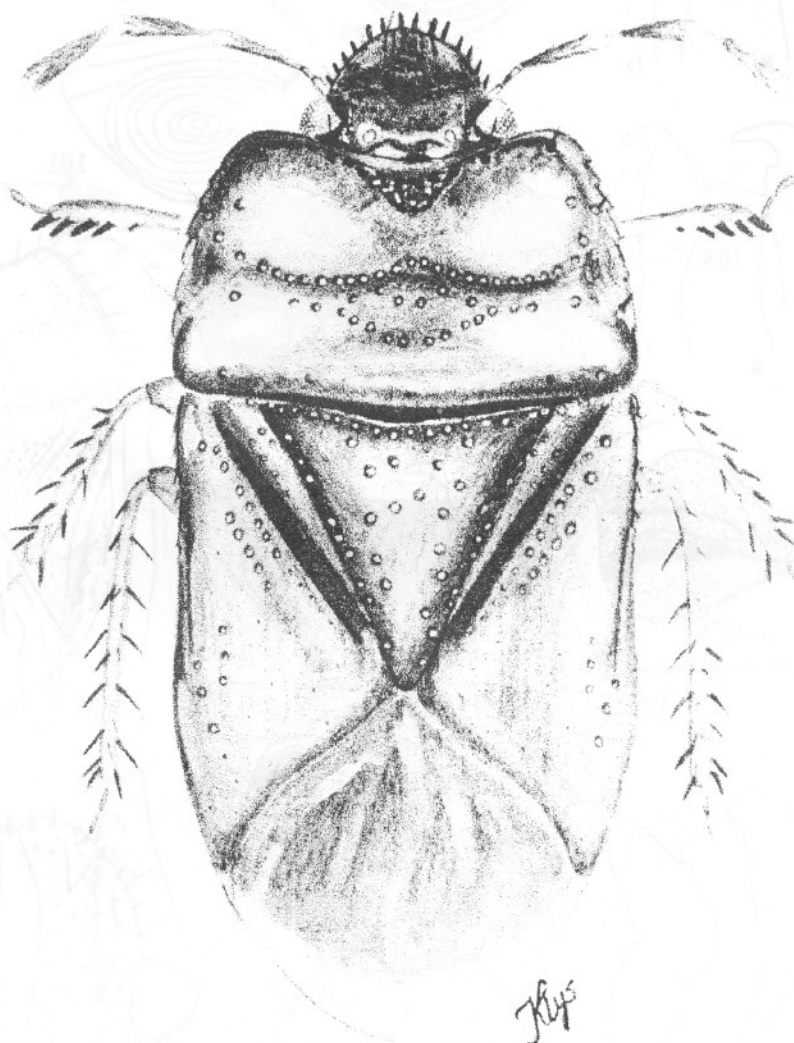
76. *Ochetostethus orientalis* - general habitus, dorsal view.



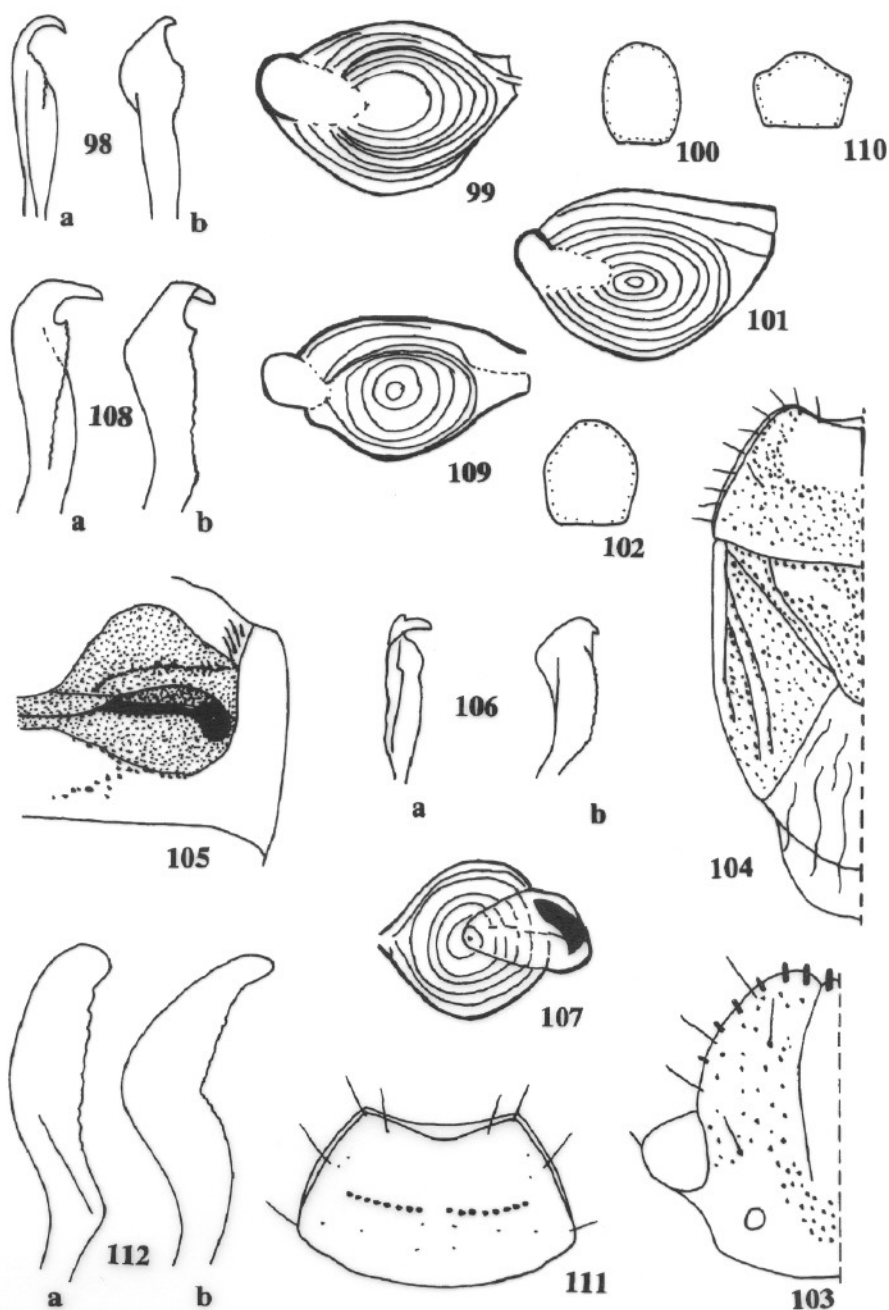
77-78. *Ochetostethus orientalis*; 79. *Centrostephus parumpunctatus*; 80-83. *Chilocoris adelphus*; 84-85. *Chilocoris costatus*; 86. *Chilocoris franzi*; 87-88. *Chilocoris heissi*; 89. *Chilocoris indicus*; 90-91. *Chilocoris pauli*; 92-94. *Chilocoris ritzemai*; 95. *Chilocoris similis*; 96. *Chilocoris sulawesicus*;

77 - evaporatoria, 78, 81, 85, 90, 92 - paramere, 79, 84 - margin of pronotum and corium, 80 - body outline, 82, 86, 88, 89, 91, 93, 96 - opening of male genital capsule (lower margin), 83, 94 - proctiger, 87 - head.

(Figs. 80-81 from Lis, 1991e).

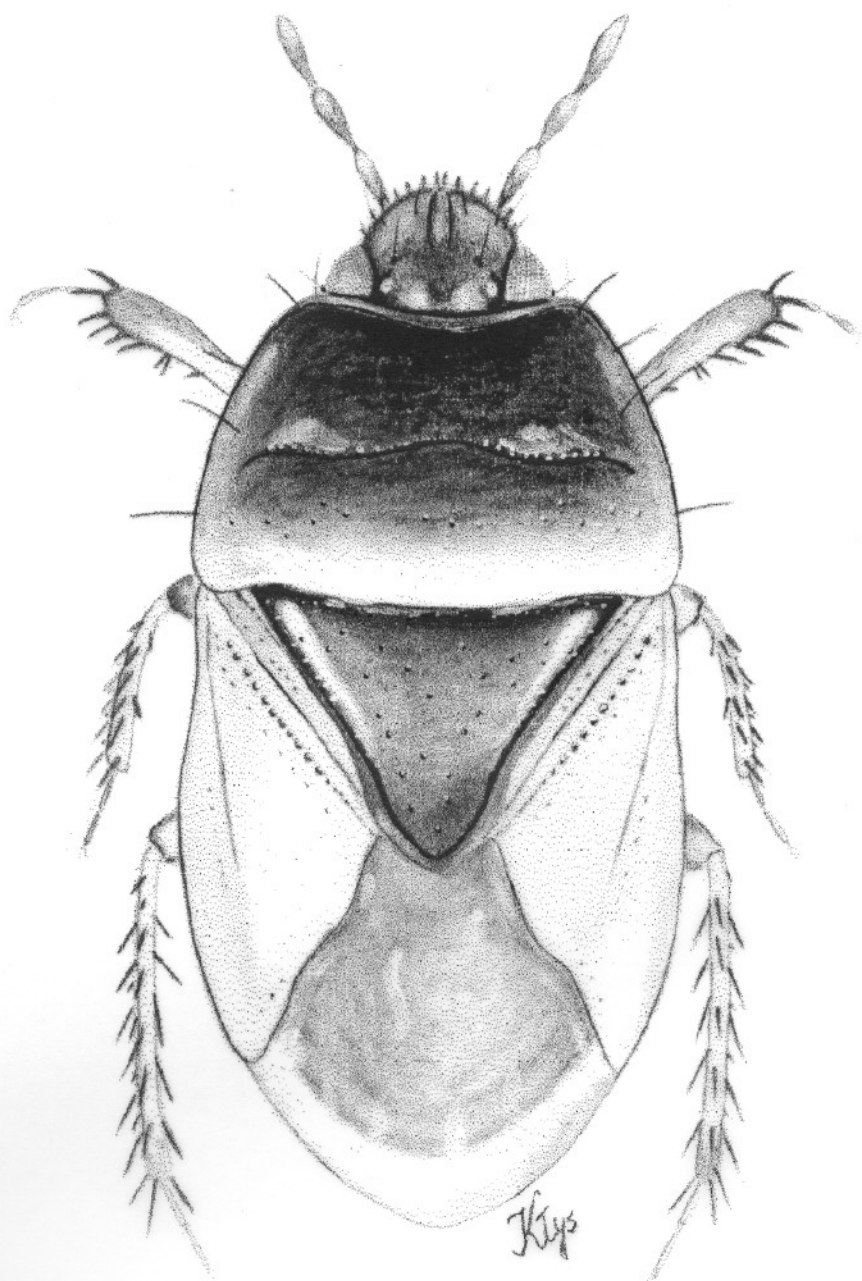


97. *Centrostephus parumpunctatus* - general habitus, dorsal view.

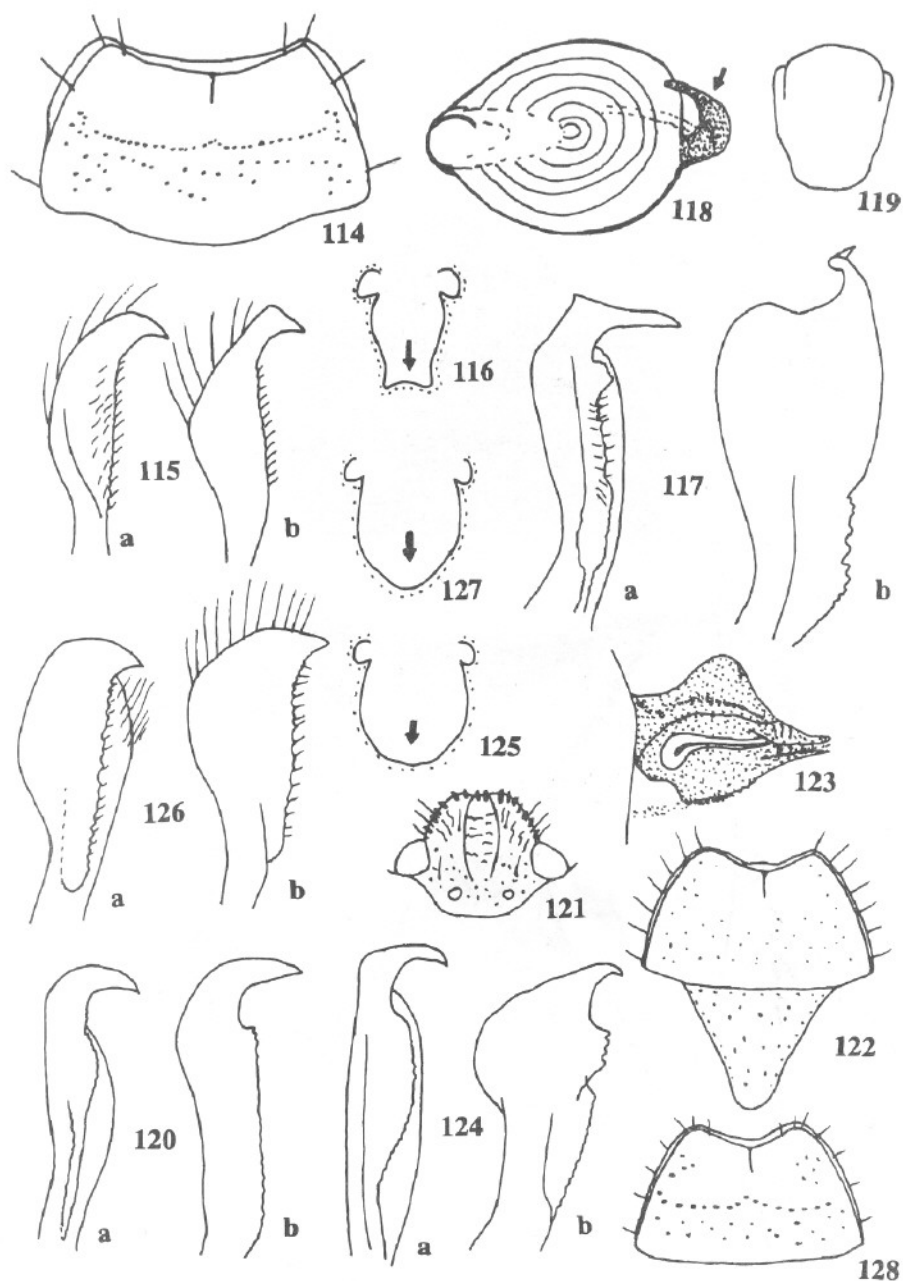


98-100. *Chilocoris birmanus*; 101-102. *Chilocoris brunneus*; 103-107. *Chilocoris longicephalus*; 108-110. *Chilocoris martensi*; 111-112. *Chilocoris montanus*:

98, 106, 108, 112 - paramere (a - front view, b - lateral view), 99, 101, 107, 109 - penis, 100, 102, 110 - proctiger, 103 - head, 104 - pronotum, scutellum and corium, 105 - evaporatoria, 111 - pronotum.

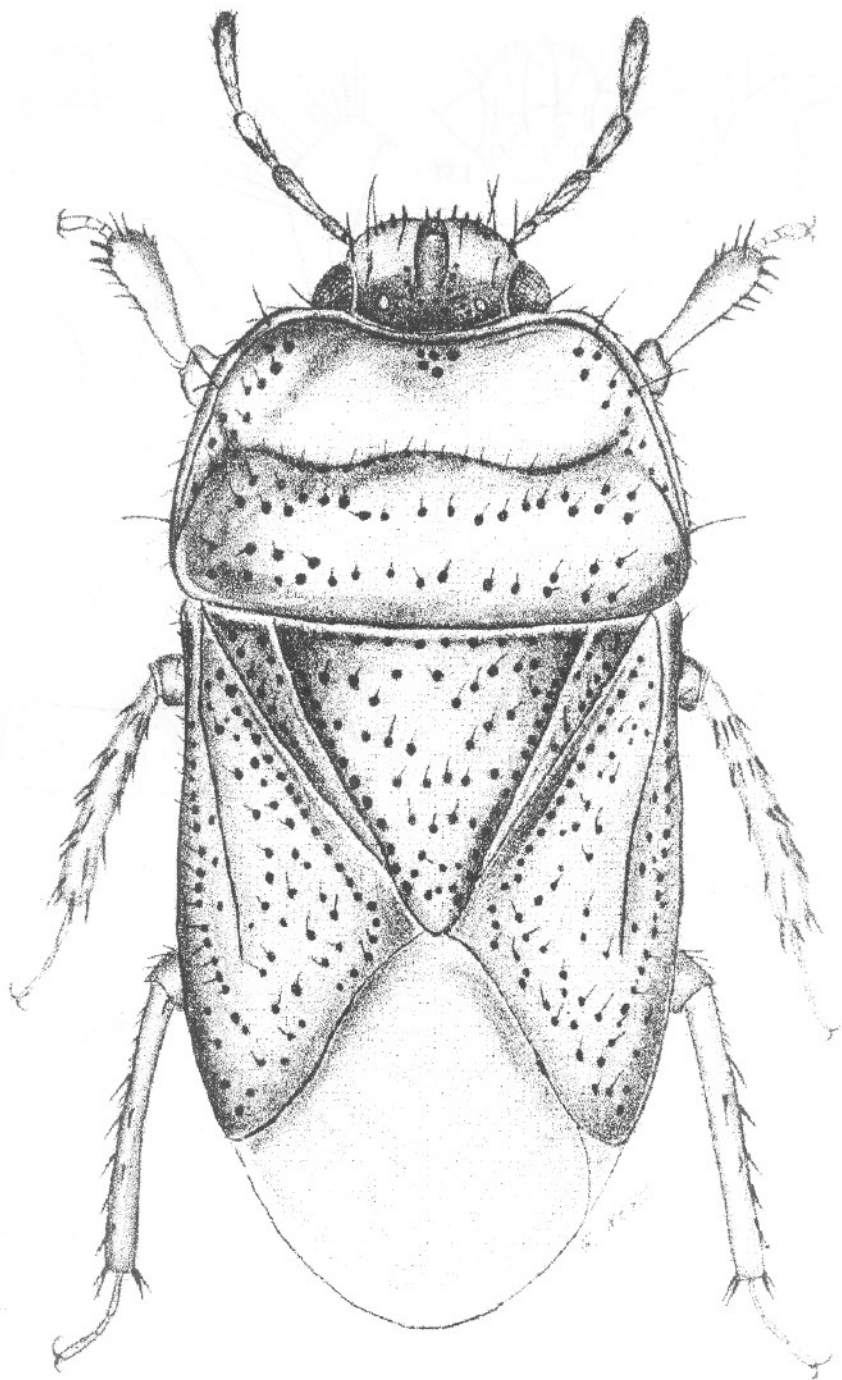


113. *Chilocoris assmuthi* - general habitus, dorsal view.

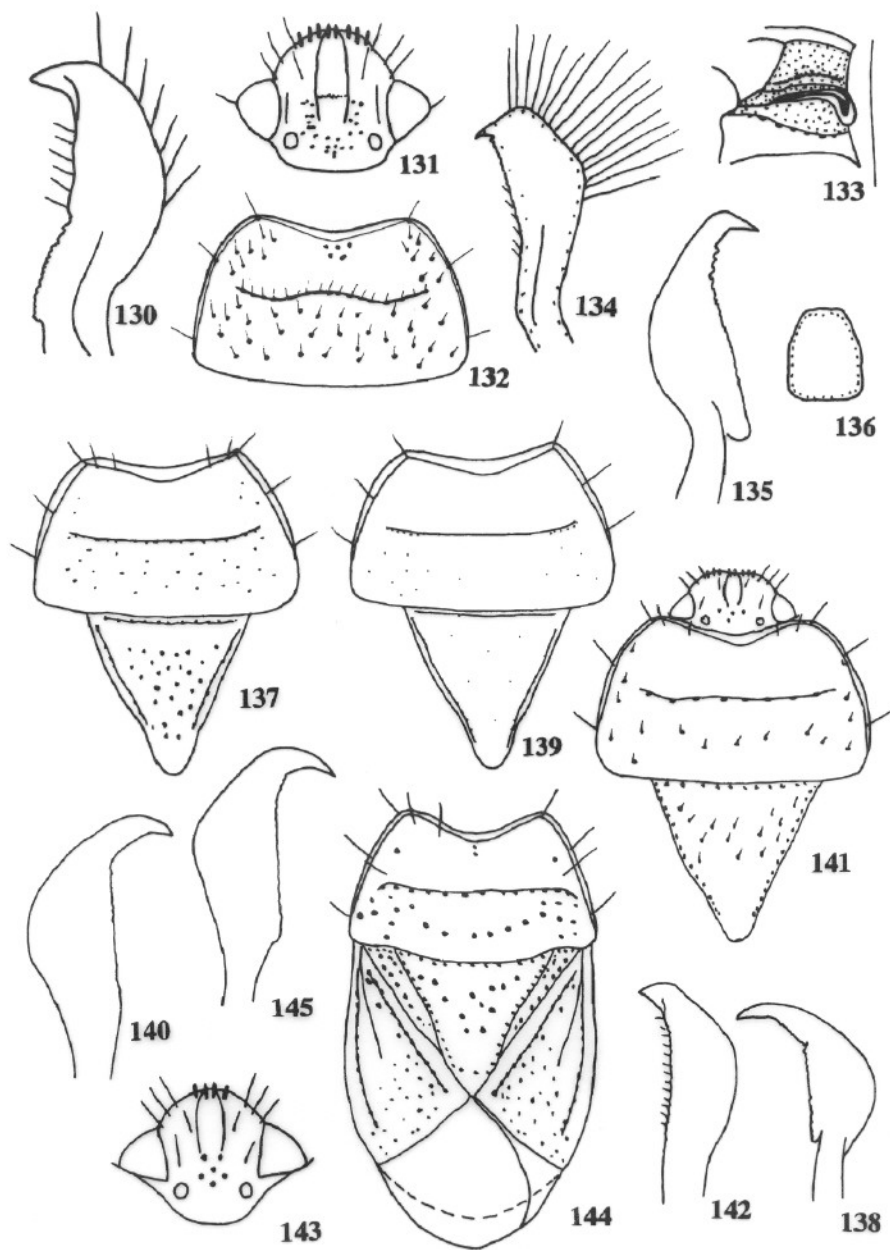


114-116. *Chilocoris muticus*; 117-119. *Chilocoris nepalensis*; 120. *Chilocoris nitidulus*;  
 121-125. *Chilocoris nitidus*; 126-127. *Chilocoris philippinensis*; 128. *Chilocoris thaicus*;  
 114, 128 - pronotum, 115, 117, 120, 124, 126 - paramere (a - front view, b - lateral view), 116, 125, 127 -  
 opening of male genital capsule (lower margin), 118 - penis, 119 - proctiger, 121 - head, 122 - pronotum  
 and scutellum, 123 - evaporatoria.





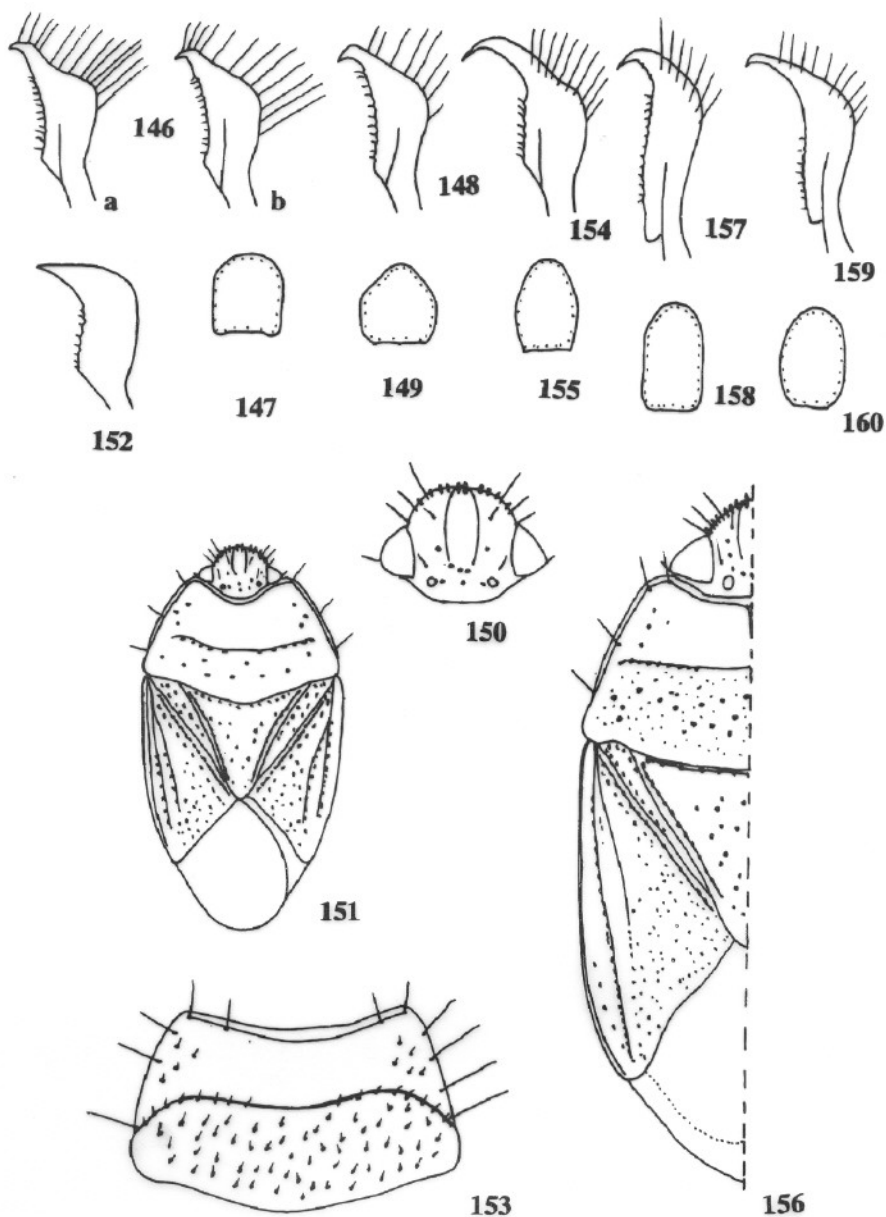
129. *Chilocoris barbarae* - general habitus, dorsal view.



130. *Chilocoris assmuthi*; 131-134. *Chilocoris barbarae*; 135-136. *Chilocoris biliranus*; 137-138. *Chilocoris bosmansii*; 139-140. *Chilocoris campbelli*; 141-142. *Chilocoris duffelsi*; 143-145. *Chilocoris incomptus*:

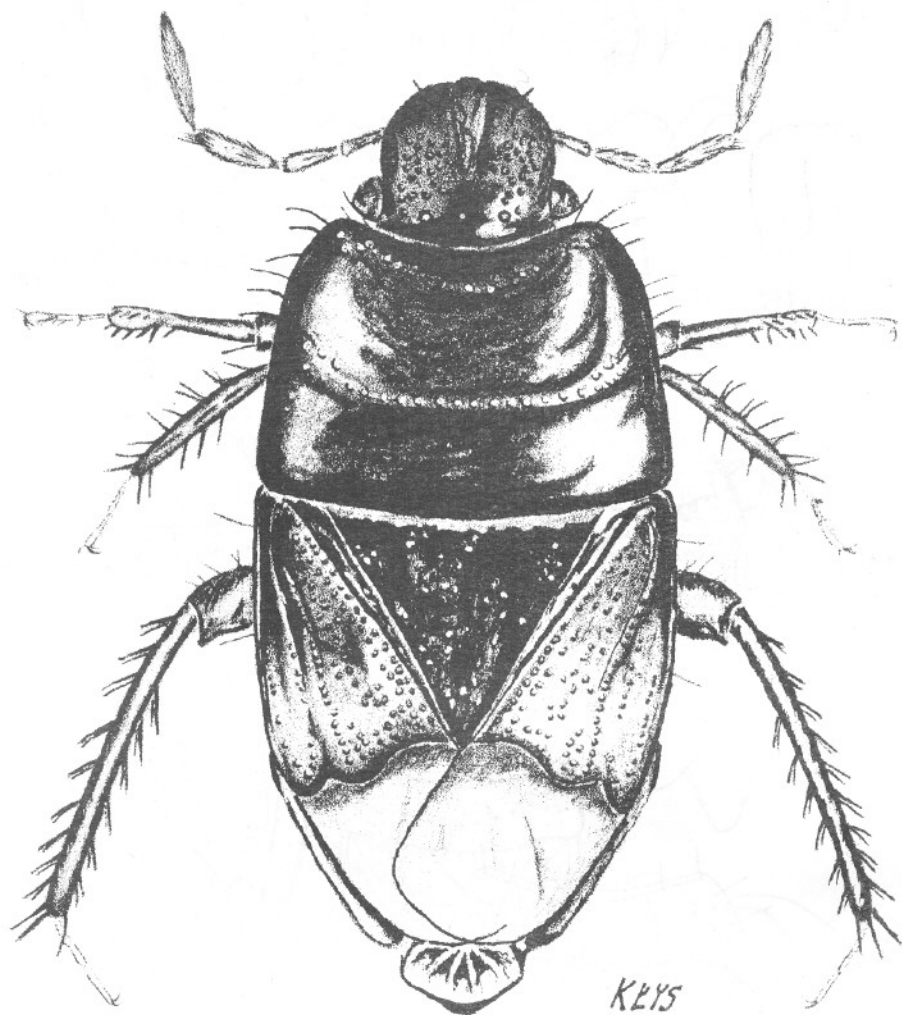
130, 134, 135, 138, 140, 142, 145 - paramere, 131, 143 - head, 132 - pronotum, 133 - evaporatoria, 136 - proctiger, 137, 139 - pronotum and scutellum, 141 - head, pronotum and scutellum, 144 - pronotum, scutellum and corium.

(Fig. 130 from Lis, 1991b, figs. 131, 133, 134 from Lis, 1991e, fig. 132 from Lis, 1993c).

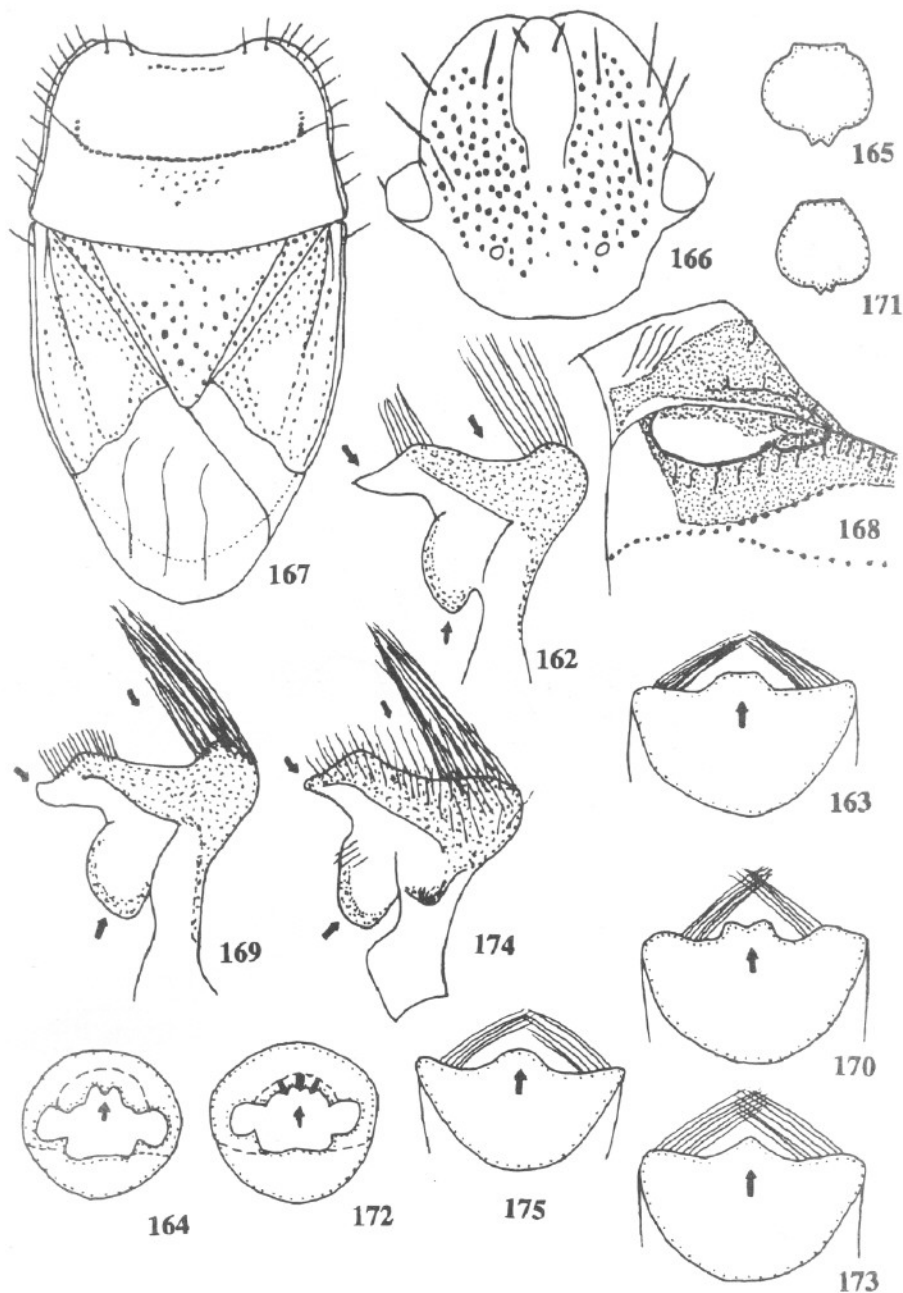


146-147. *Chilocoris piceus*; 148-149. *Chilocoris pseudopiceus*; 150-152. *Chilocoris pusillus*;  
 153. *Chilocoris sulcatus*; 154-155. *Chilocoris sumatranus*; 156-158. *Chilocoris vanstallei*;  
 159-160. *Chilocoris wallacei*;

146, 148, 152, 154, 157, 159 - paramere (a - specimen from Malaya, b - specimen from India),  
 147, 149, 155, 158, 160 - proctiger, 150 - head, 151, 156 - body outline, 153 - pronotum.



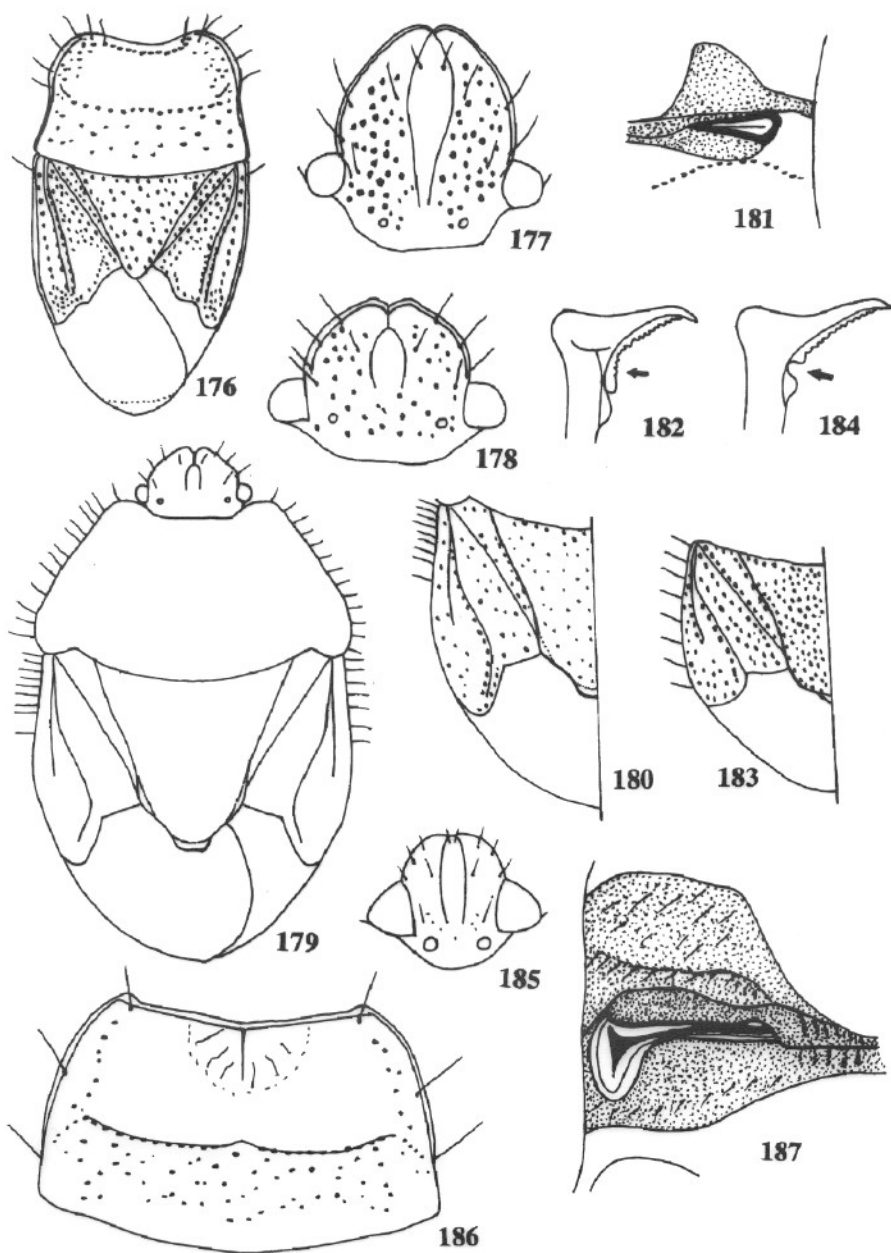
161. *Cydnopeltus sulawesicus* - general habitus, dorsal view.



162-165. *Cydnopeltus horvathii*; 166-170. *Cydnopeltus incisus*; 171-173. *Cydnopeltus luzonicus*; 174-175. *Cydnopeltus sulawesicus*:

162, 169, 174 - paramere, 163, 170, 173, 175 - male genital capsule in ventral view, 164, 172 - opening of male genital capsule, 165, 171 - proctiger, 166 - head, 167 - pronotum, scutellum and corium, 168 - evaporatoria.

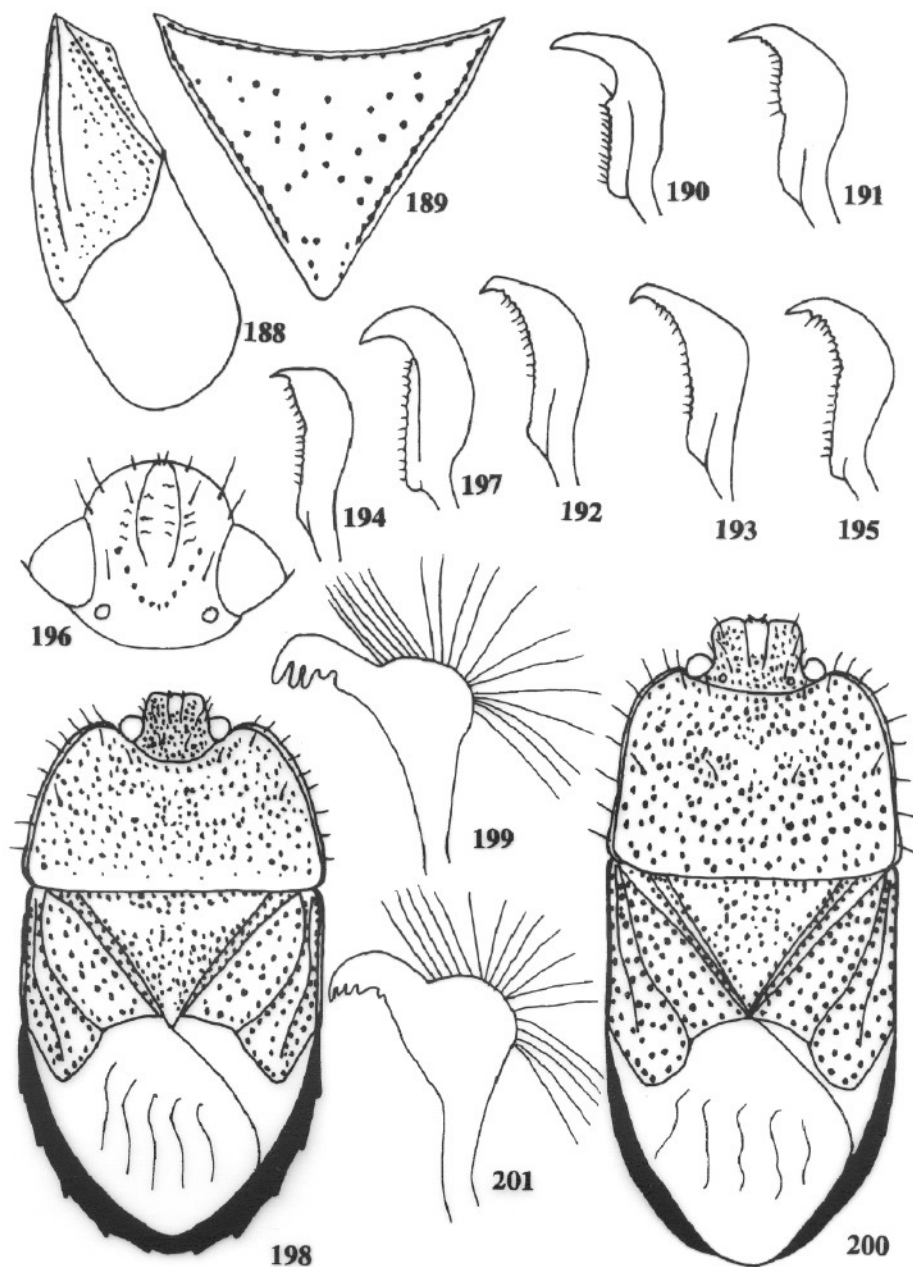
(Figs. 169 and 174 from Lis, 1991e).



176-177. *Cydnus borneensis*; 178-182. *Nishadana typica*; 183-184. *Nishadana umbrosa*;  
185-187. *Parachilocoris dispar*.

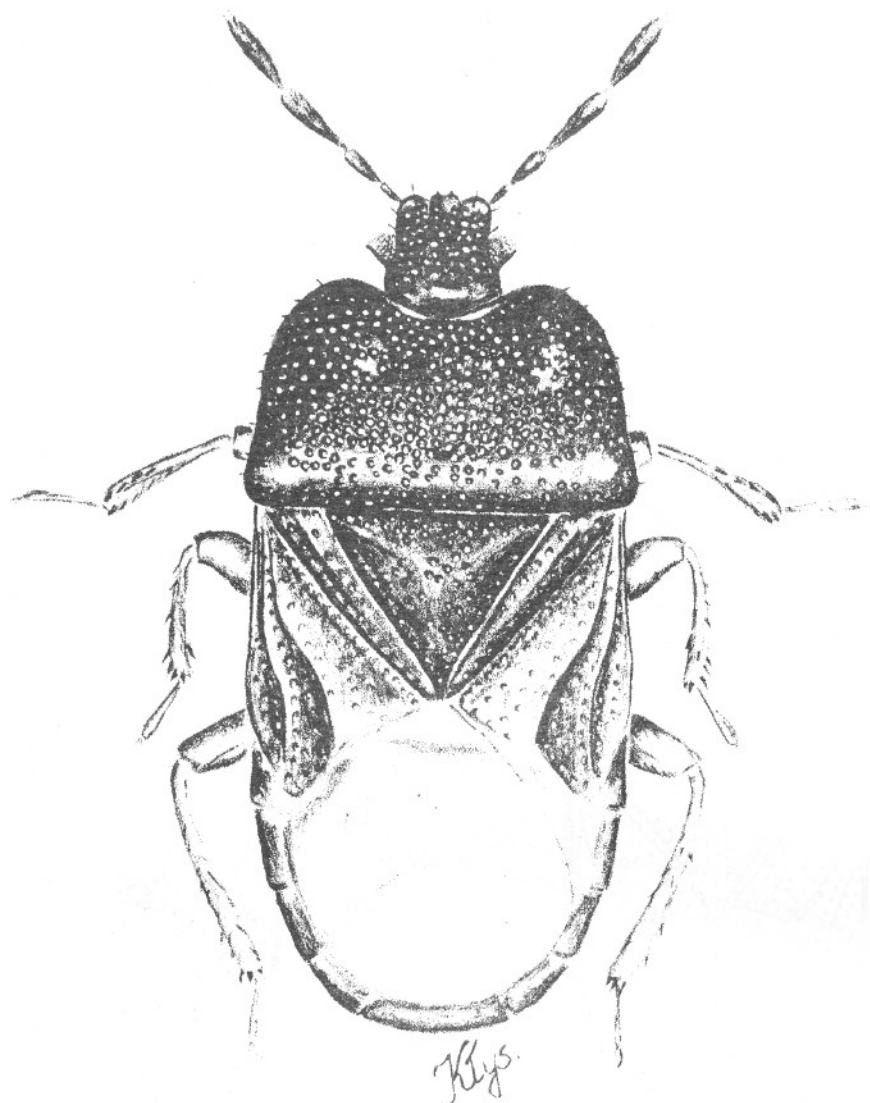
176 - pronotum, scutellum and corium, 177, 178, 185 - head, 179 - body outline, 180, 183 - scutellum and corium, 181, 187 - evaporatoria, 182, 184 - paramere, 186 - pronotum.



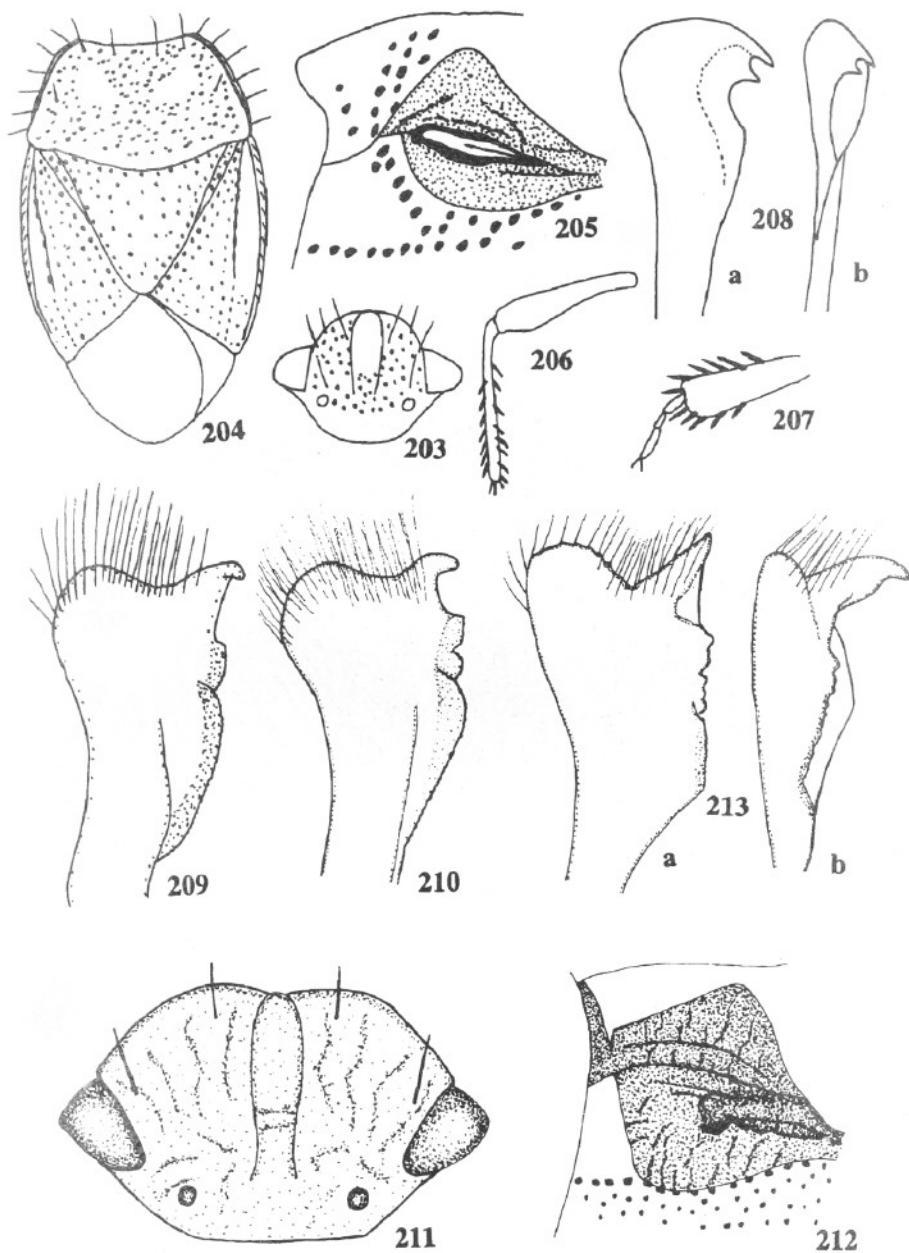


188-190. *Parachilocoris dispar*; 191. *Parachilocoris borneensis*; 192. *Parachilocoris luzonicus*; 193. *Parachilocoris mariani*; 194. *Parachilocoris minutus*; 195. *Parachilocoris navus*; 196-197. *Parachilocoris semialbidus*; 198-199. *Peltoxys brevipennis*; 200-201. *Peltoxys typicus*:

188 - hemelytron, 189 - scutellum, 190-195, 197, 199, 201 - paramere, 196 - head, 198, 200 - body outline.  
(Figs. 198 and 200 from Lis, 1991a).

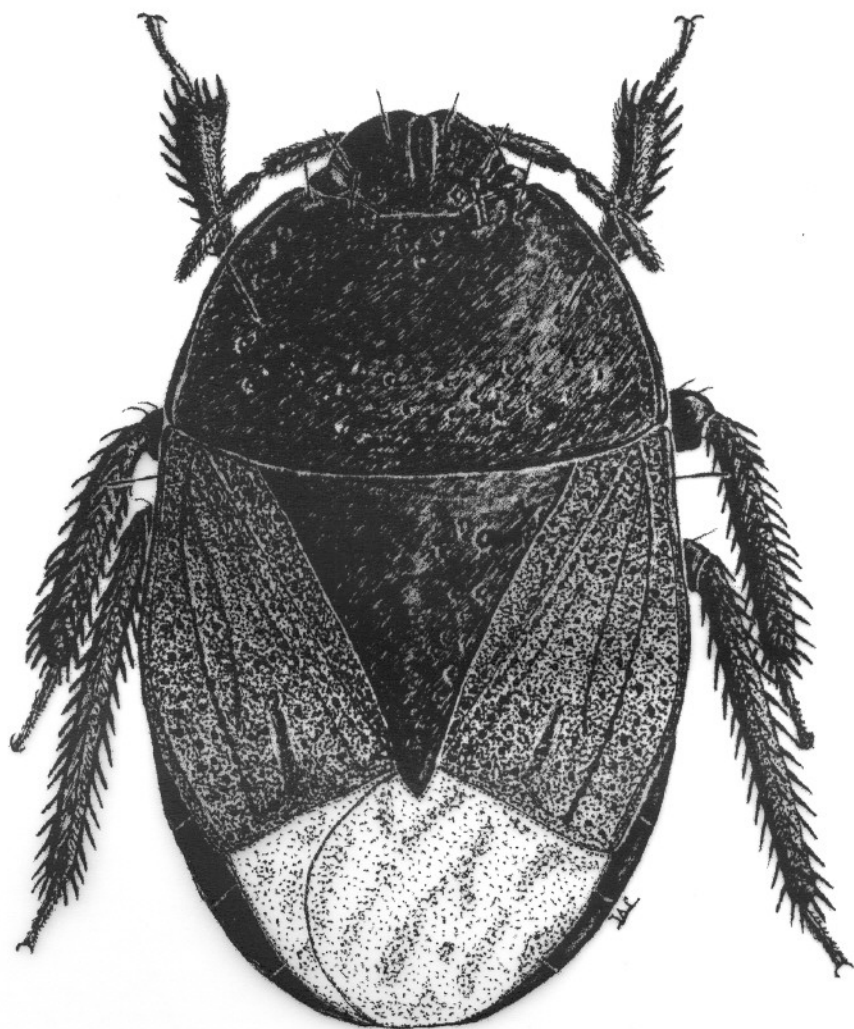


202. *Peltoxys typicus* - general habitus, dorsal view.

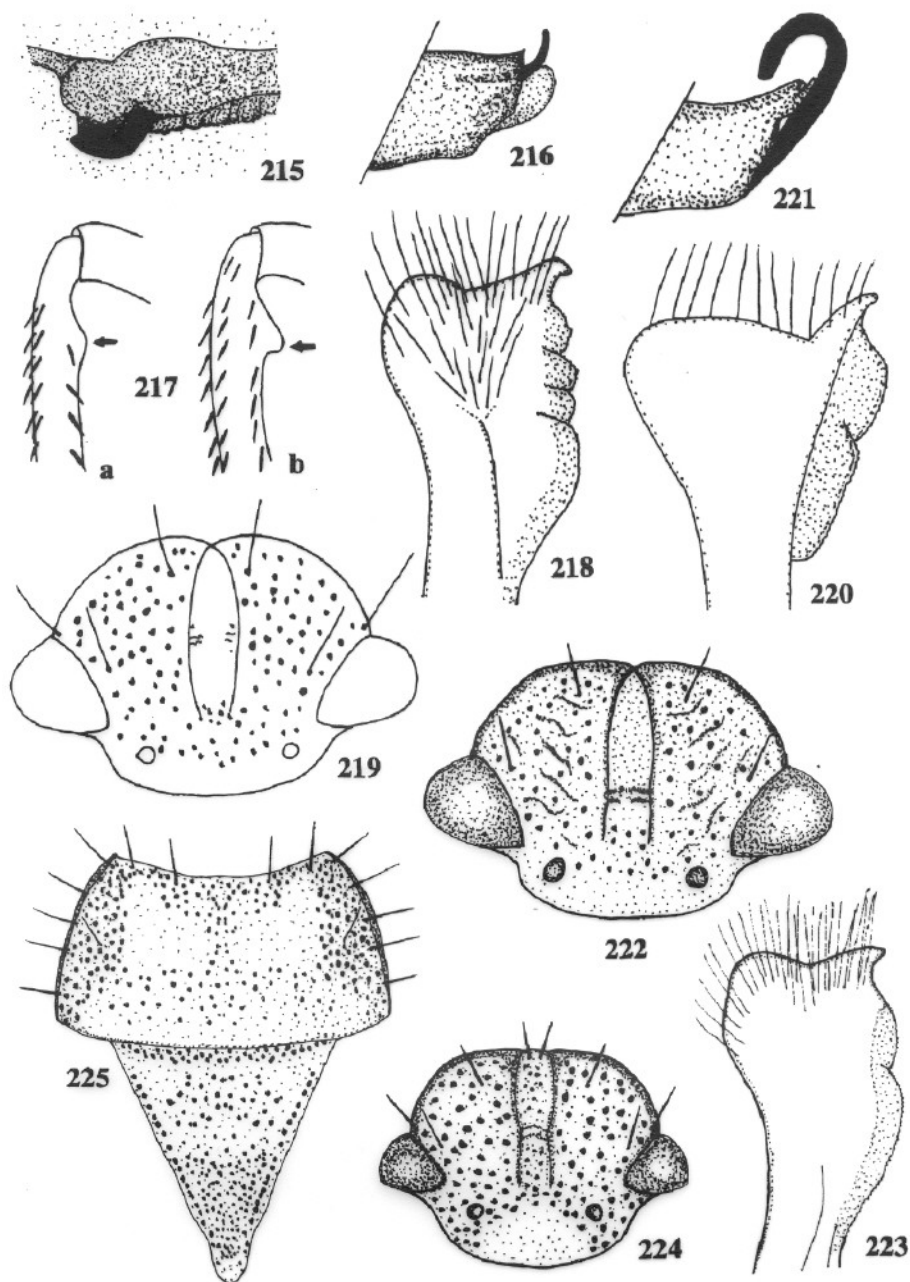


203-208. *Pullneya meracula*; 209. *Adriša clara*; 210. *Adriša magna*; 211-213. *Adriša nigra*: 203, 211 - head, 204 - pronotum, scutellum and hemelytra, 205, 212 - evaporatoria, 206 - femur and tibia of posterior leg, 207 - apical part of anterior tibia, 208-210, 213 - paramere (a - lateral view, b - front view).

(Figs. 210-213 from Lis, 1992a).



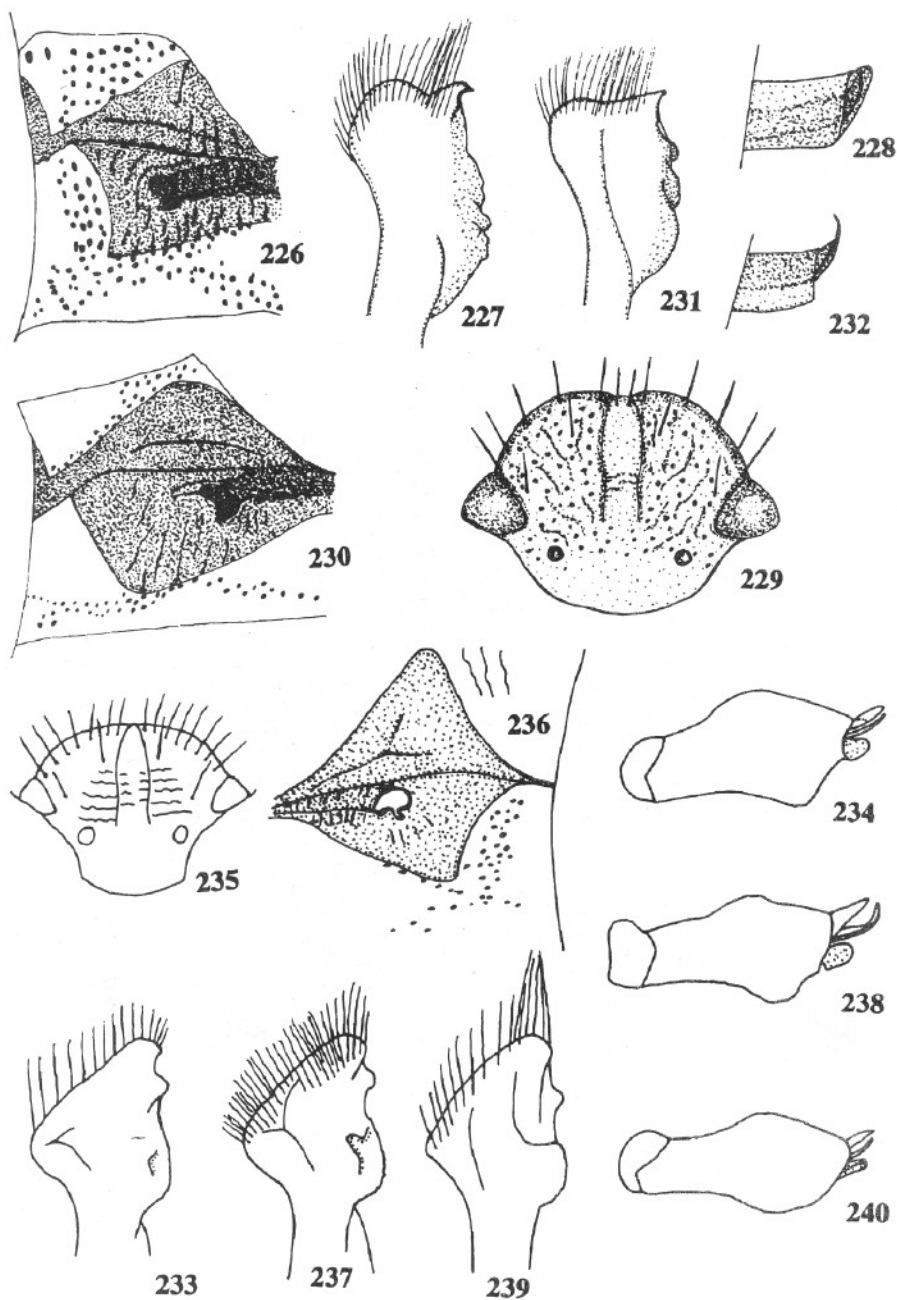
214. *Adrisa nigra* - general habitus, dorsal view.



215-216. *Adrisa nigra*; 217-218. *Adrisa rawlinsi*; 219-221. *Adrisa romani*; 222-223 *Adrisa sumatrana*; 224-225. *Adrisa birmana*:

215 - apex of peritreme, 216, 221 - apical part of penis, 217 - basal part of posterior tibia (a - female, b - male), 218, 220, 223 - paramere, 219, 222, 224 - head, 225 - pronotum and scutellum.

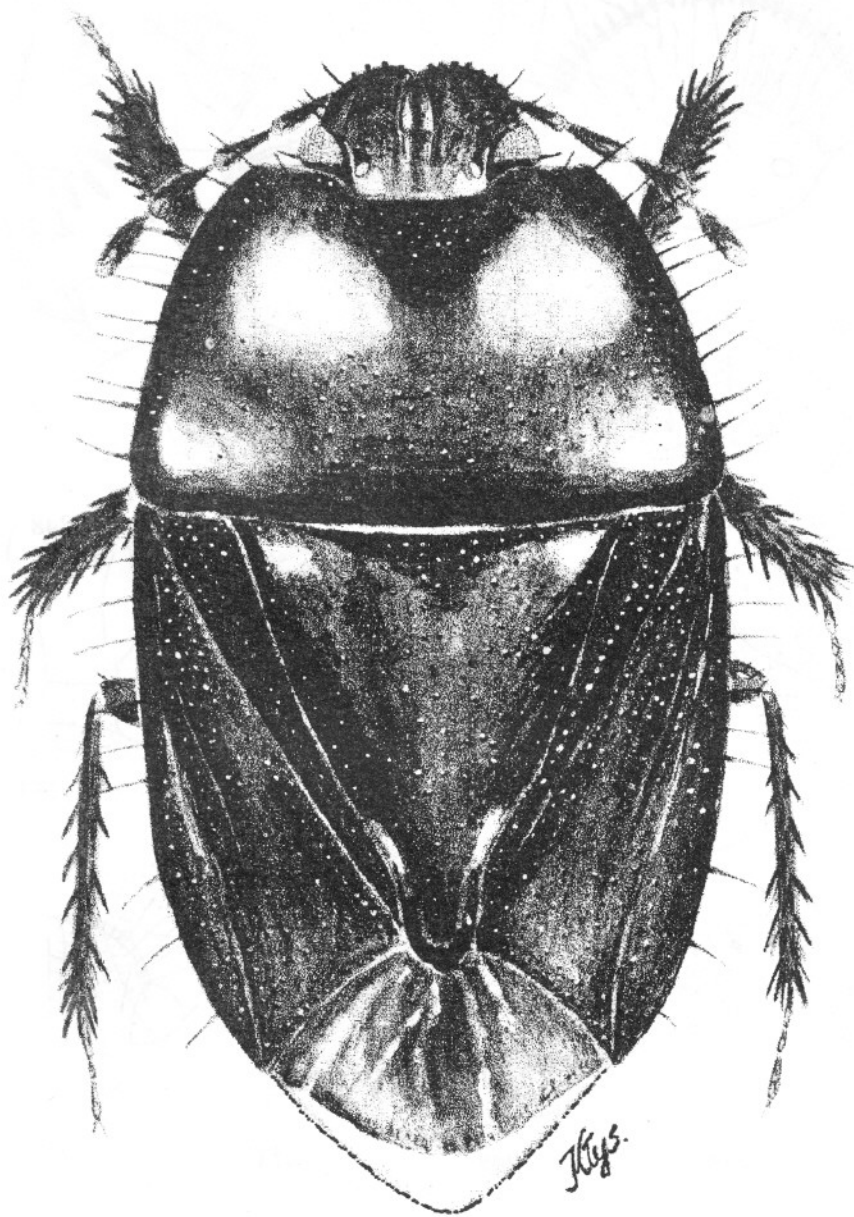
(Figs. 215-216, 222-225 from Lis, 1992a).



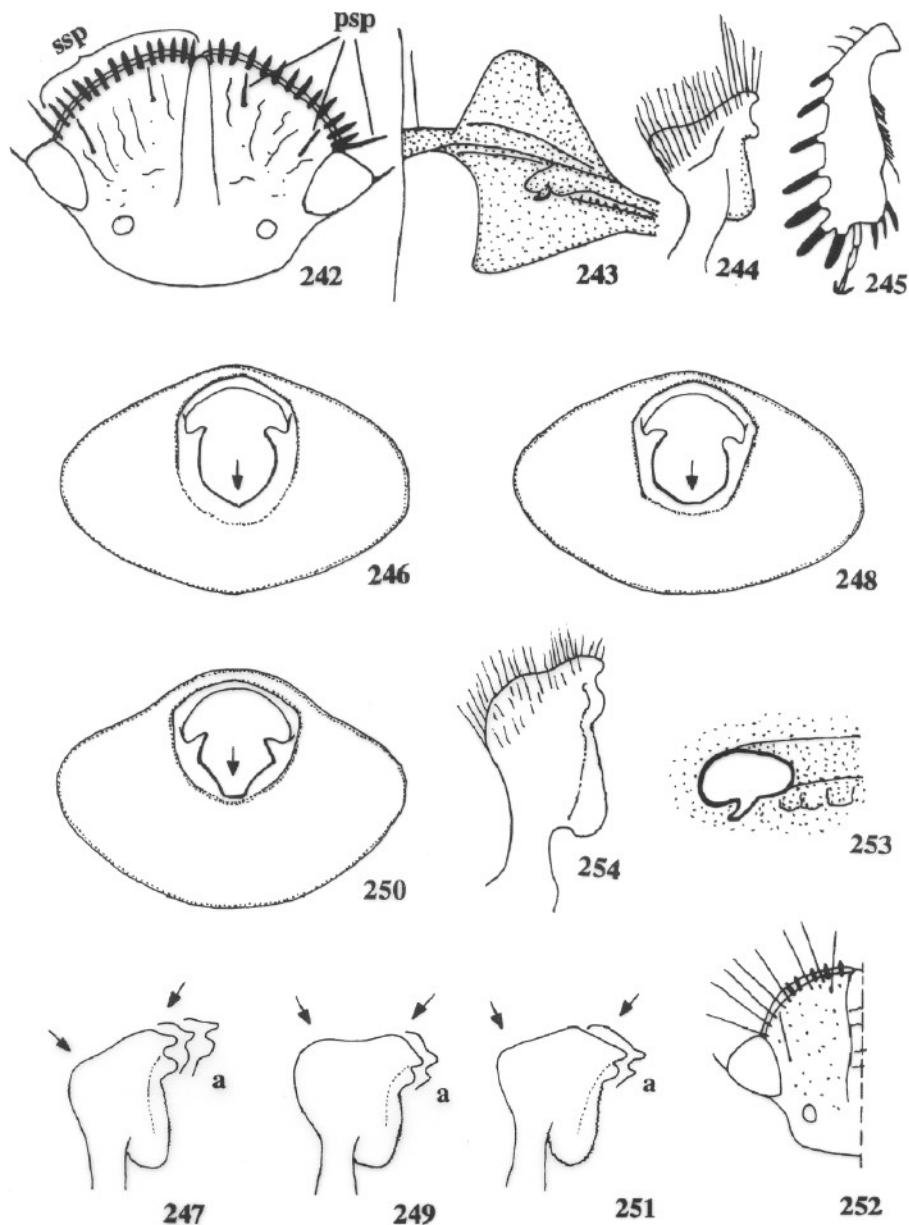
226-228. *Adrisa bimana*; 229-232. *Adrisa nitidicollis*; 233-234. *Aethoscytus baloni*;  
 235-238. *Aethoscytus foveolus*; 239-240. *Aethoscytus secundus*;  
 226, 230, 236 - evaporatoria, 227, 231, 233, 237, 239 - paramere, 228, 232 - apical part of penis,  
 229, 235 - head, 234, 238, 240 - penis.

(Figs. 226-232 from Lis, 1992a).





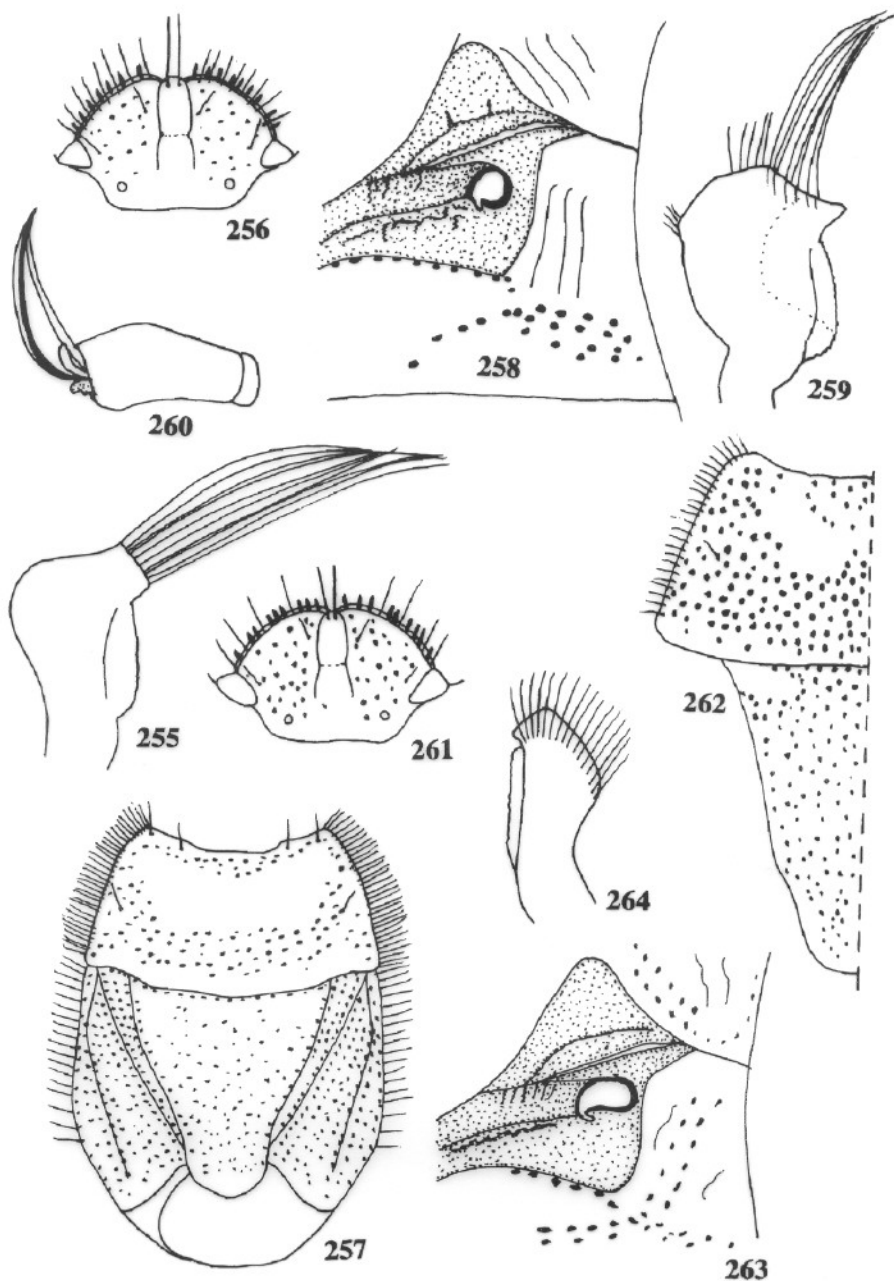
241. *Aethus indicus* - general habitus, dorsal view.



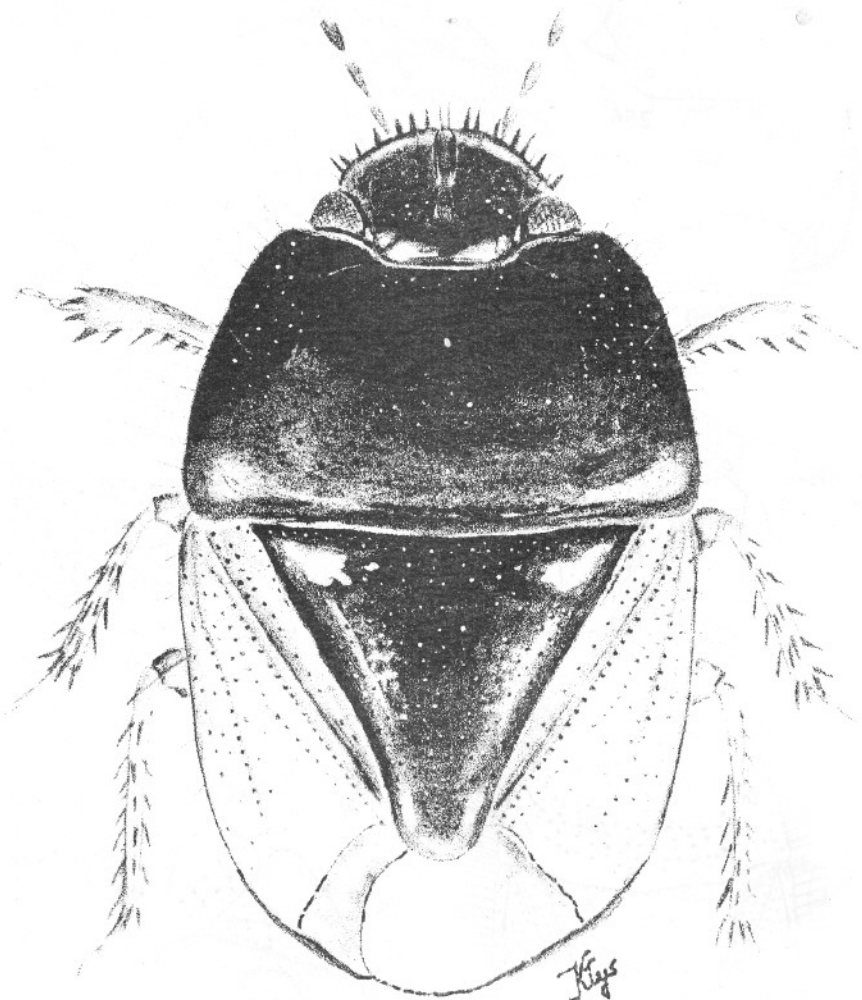
242-245. *Aethus borrei*; 246-247. *Aethus indicus*; 248-249. *Aethus pseudindicus*; 250-251. *Aethus philippinensis*; 252-254. *Aethus islamabadensis*:

242, 252 - head (psp - primary setigerous punctures, ssp - secondary setigerous punctures), 243 - evaporatoria, 244, 247, 249, 251, 254 - paramere (a - variations of the blade shape), 245 - anterior tibia, 246, 248, 250 - male genital capsule, dorsal view, 253 - apex of peritreme.

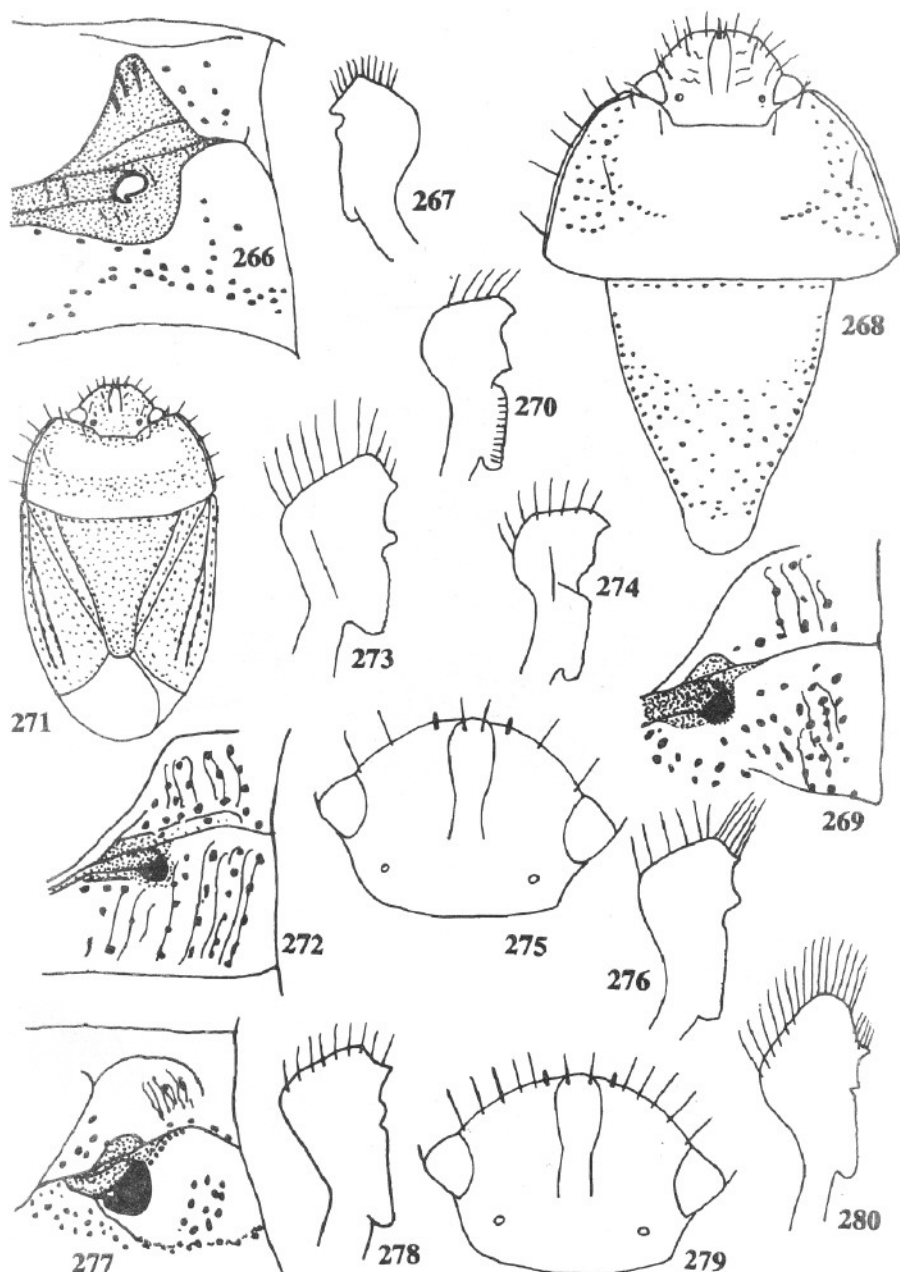
(Figs. 246-251 from Lis, 1993d).



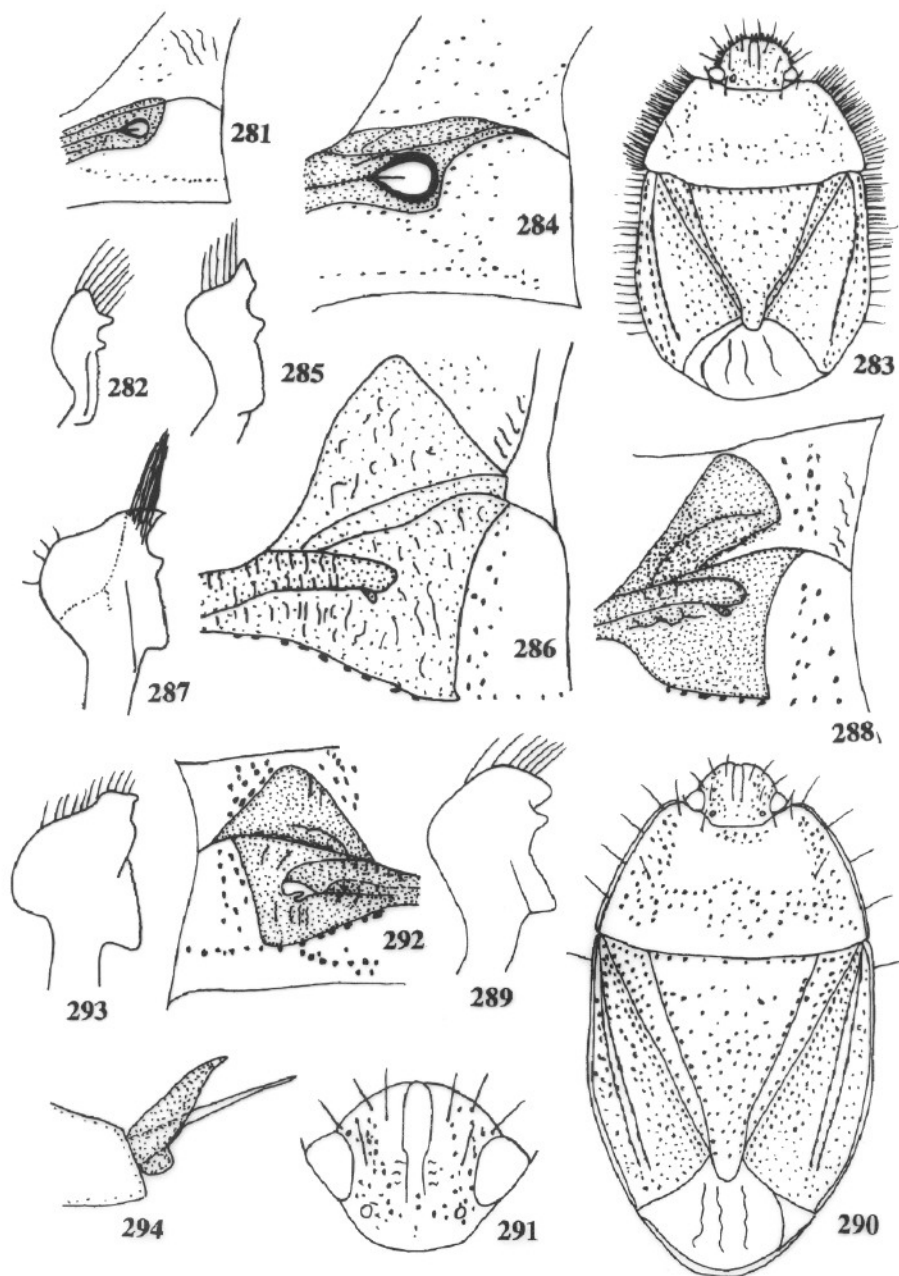
255. *Aethus karlaicus*; 256-260. *Aethus mumba*; 261-264. *Aethus nepalensis*:  
 255, 259, 264 - paramere, 256, 261 - head, 257 - pronotum, scutellum and hemelytra,  
 258, 263 - evaporatoria, 260 - penis, 262 - pronotum and scutellum.



265. *Aethus tanna* - general habitus, dorsal view.

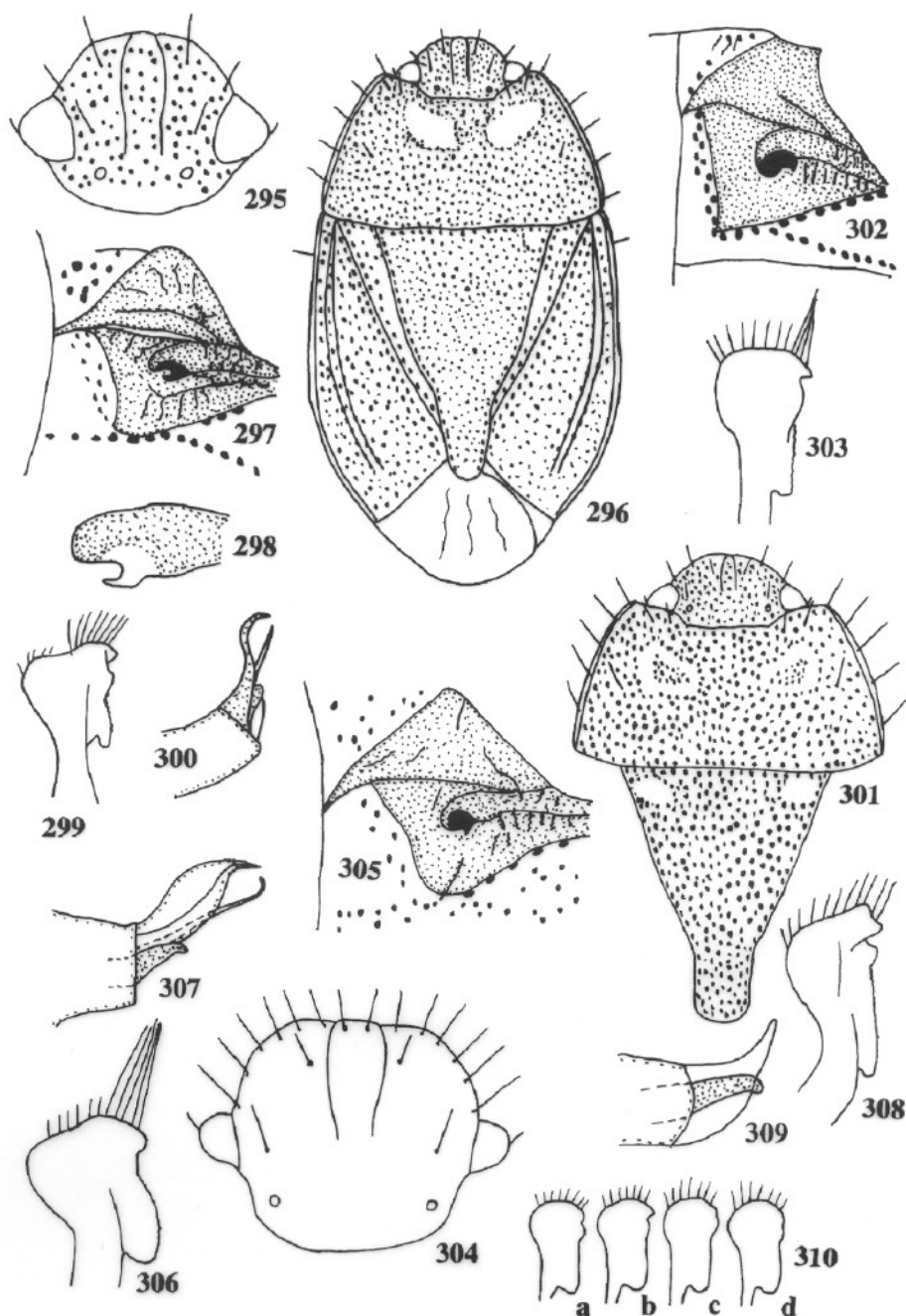


266-267. *Aethus tanna*; 268-270. *Alonips acrostictus*; 271-273. *Alonips apicalis*;  
 274. *Alonips microevaporatorius*; 275-276. *Alonips mirabilis*; 277-278. *Alonips subrotundus*;  
 279-280. *Alonips taiwanicus*;  
 266, 269, 272, 277 - evaporatoria, 267, 270, 273, 274, 276, 278, 280 - paramere, 268 - head, pronotum and  
 scutellum, 271 - body outline, 275, 279 - head.  
 (Figs. 269, 272, 277, 278 from Lis, 1991b).

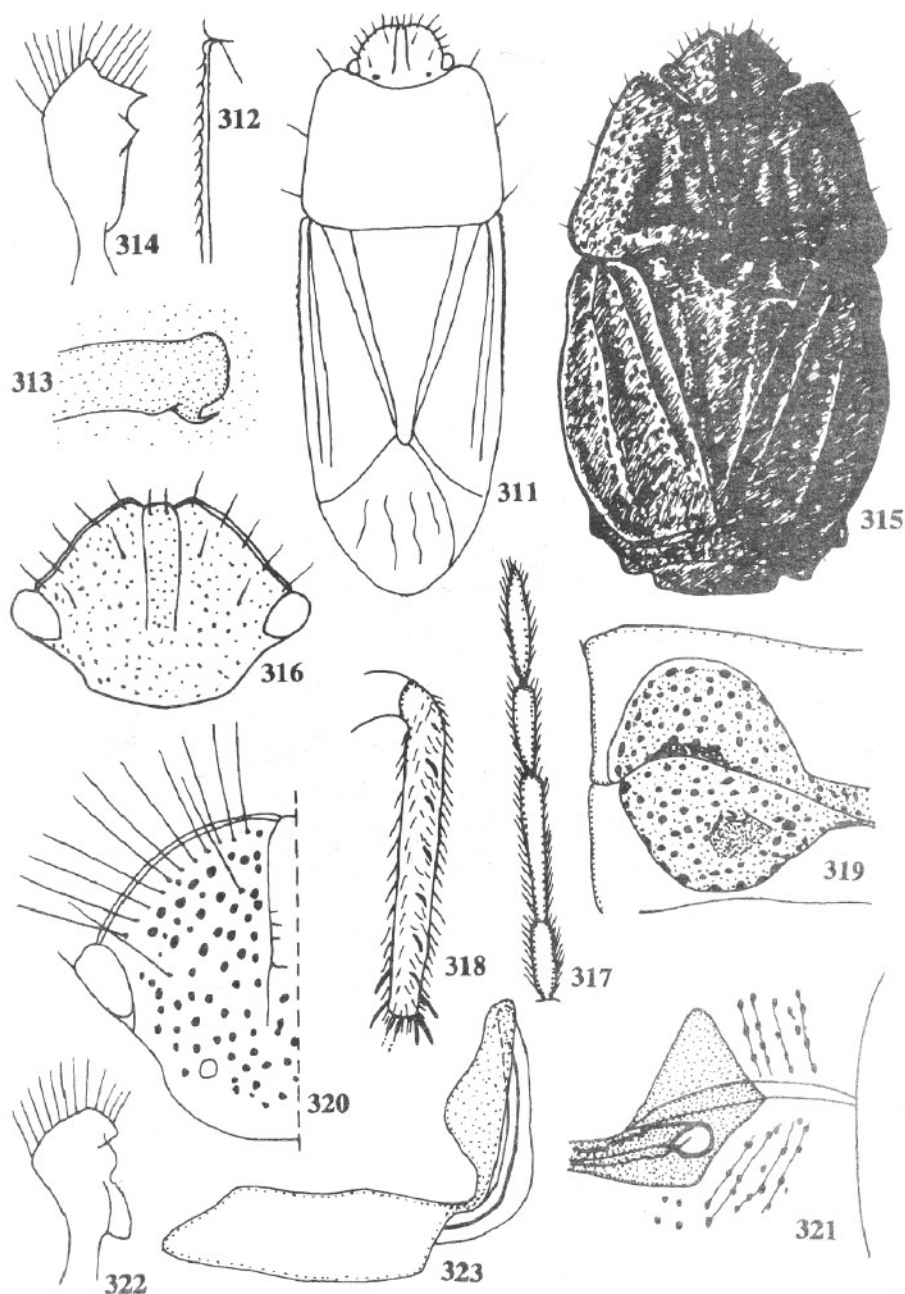


281-282. *Byrsinus pilosulus*; 283-285. *Byrsinus varians*; 286-287. *Fromundiellus maurus*;  
 288-289. *Fromundiellus peshawarensis*; 290-294. *Fromundus biimpressus*:  
 281, 284, 286, 288, 292 - evaporatoria, 282, 285, 287, 289, 293 - paramere, 283, 290 - body outline,  
 291 - head, 294 - apical part of penis.  
 (Figs. 286-287 from Lis, 1991b).





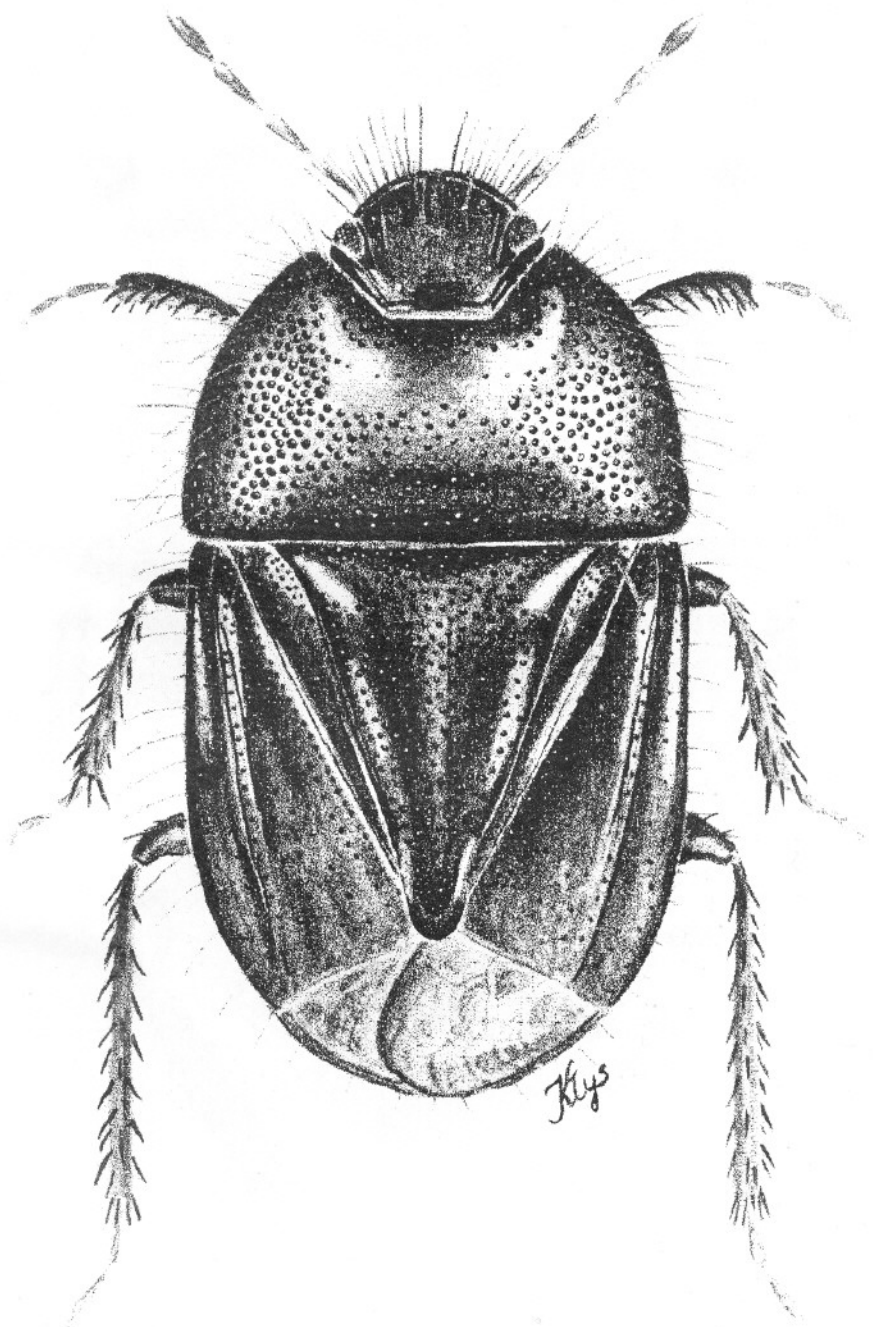
295-300. *Fromundus flavirostris*; 301-303. *Fromundus opacellus*; 304-307. *Fromundus opacus*; 308-309. *Fromundus pseudopacus*; 310. *Fromundus pygmaeus*:  
 295, 304 - head, 296 - body outline, 297, 302, 305 - evaporatoria, 298 - apex of peritreme,  
 299, 303, 306, 308, 310 - paramere (a, b, c, d - shape variability), 300, 307, 309 - apical part of penis,  
 301 - head, pronotum and scutellum.



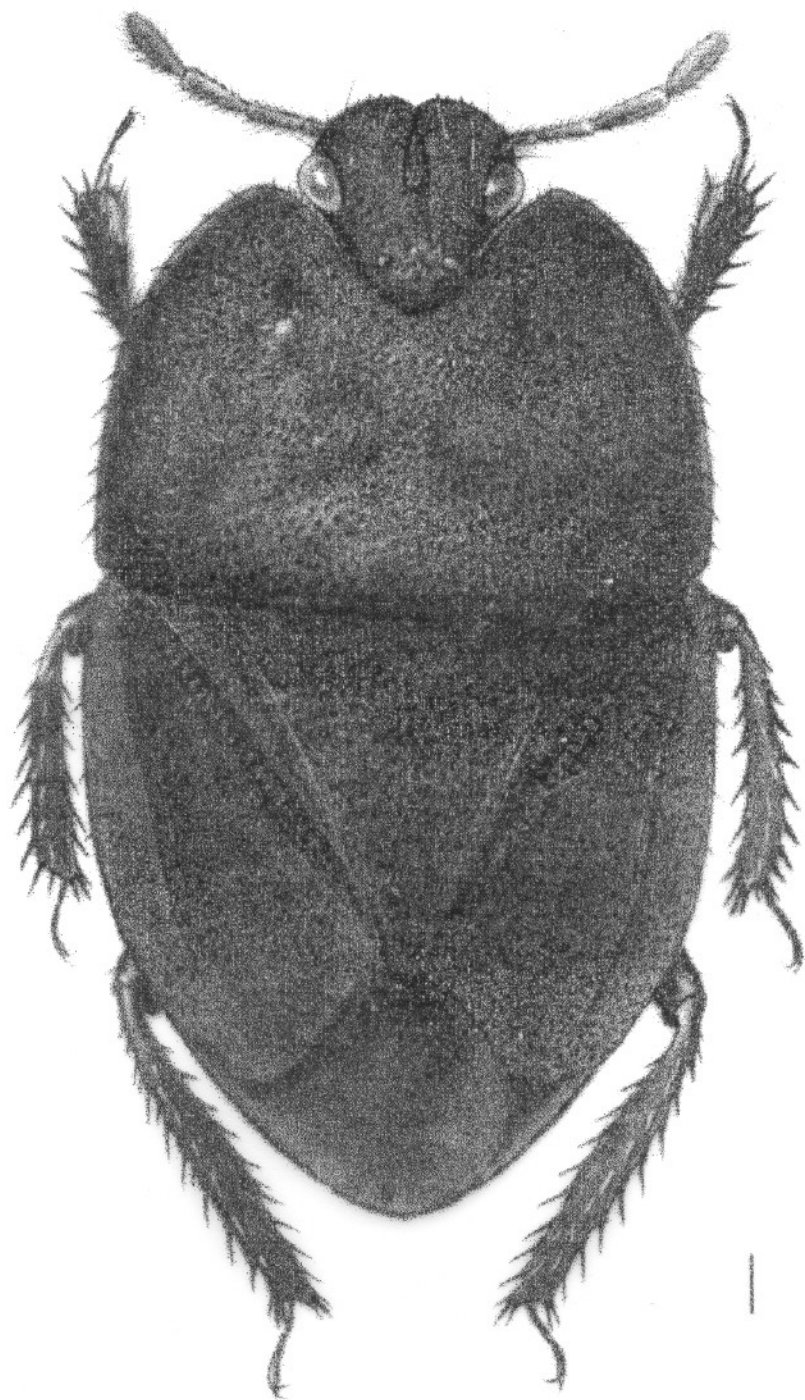
311-314. *Gampsotes parallelus*; 315-319. *Geopeltus tuberculatus*; 320-323. *Geotomus perpunctatus*:

311 - body outline, 312 - costal margin, 313 - apex of peritreme, 314, 322 - paramere, 315 - general habitus, dorsal view, 316, 320 - head, 317 - antenna, 318 - posterior tibia, 319, 321 - evaporatoria, 323 - penis.

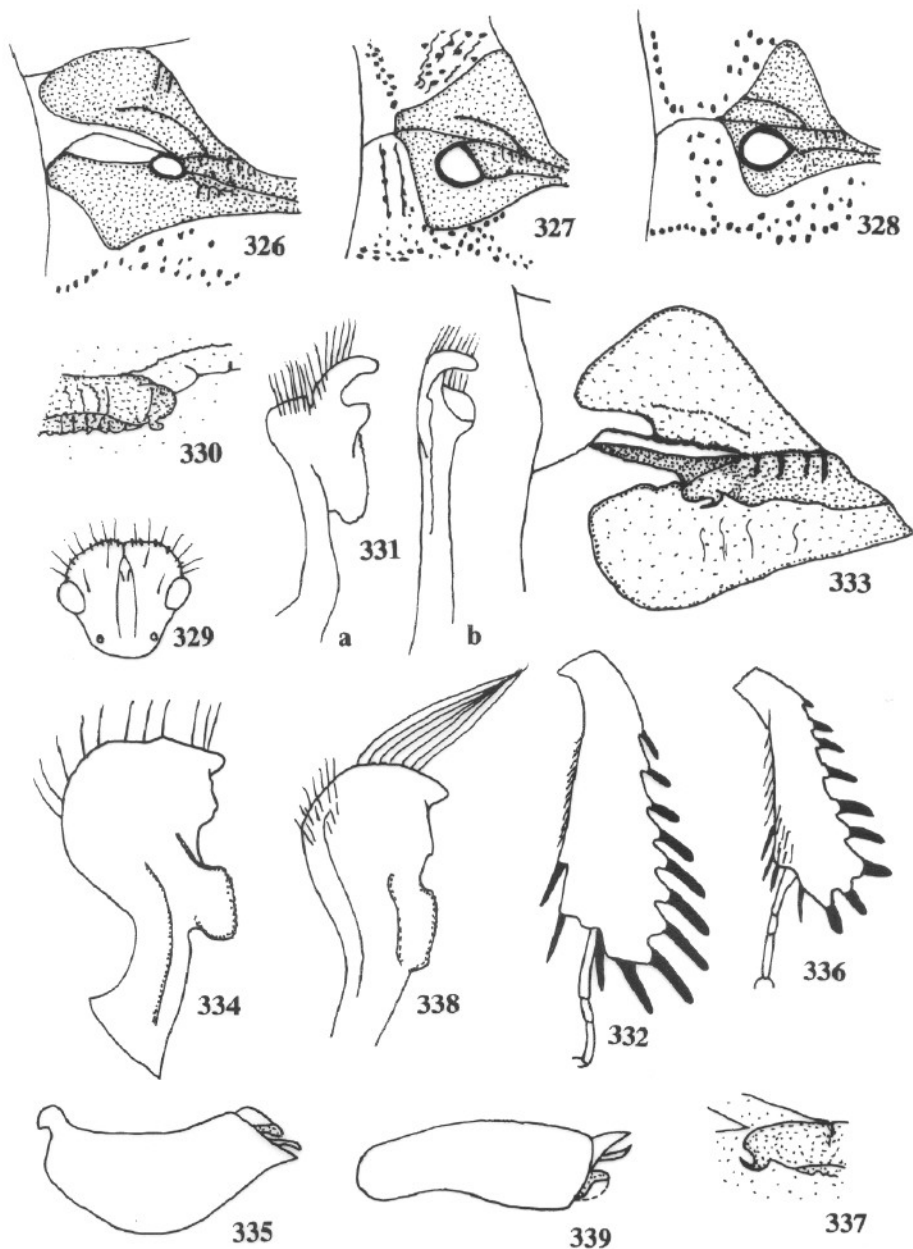
(Figs. 315-319 from Lis, 1990b).



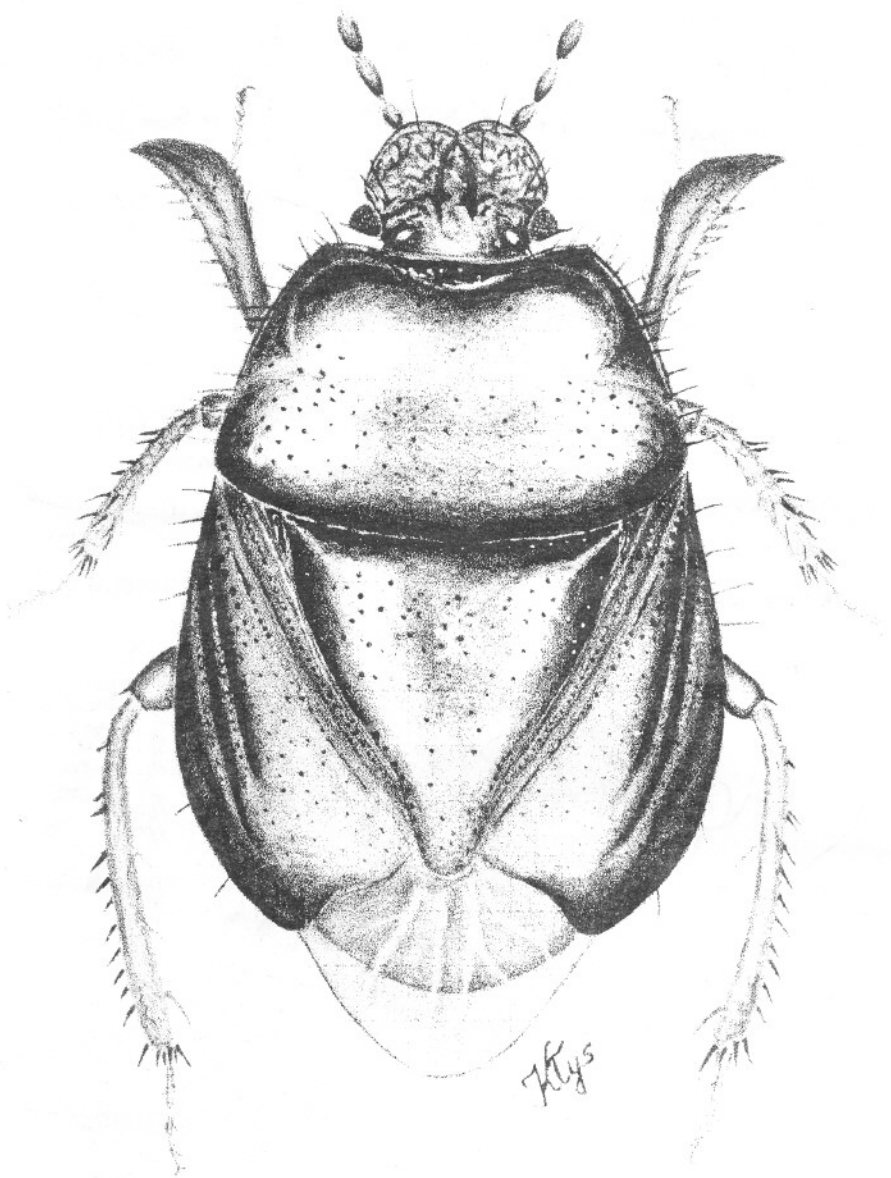
324. *Geotomus (Barbaraethus) perpunctatus* - general habitus, dorsal view.



325. *Katakadia caliginosa* - general habitus, dorsal view (from FROESCHNER, 1960b).

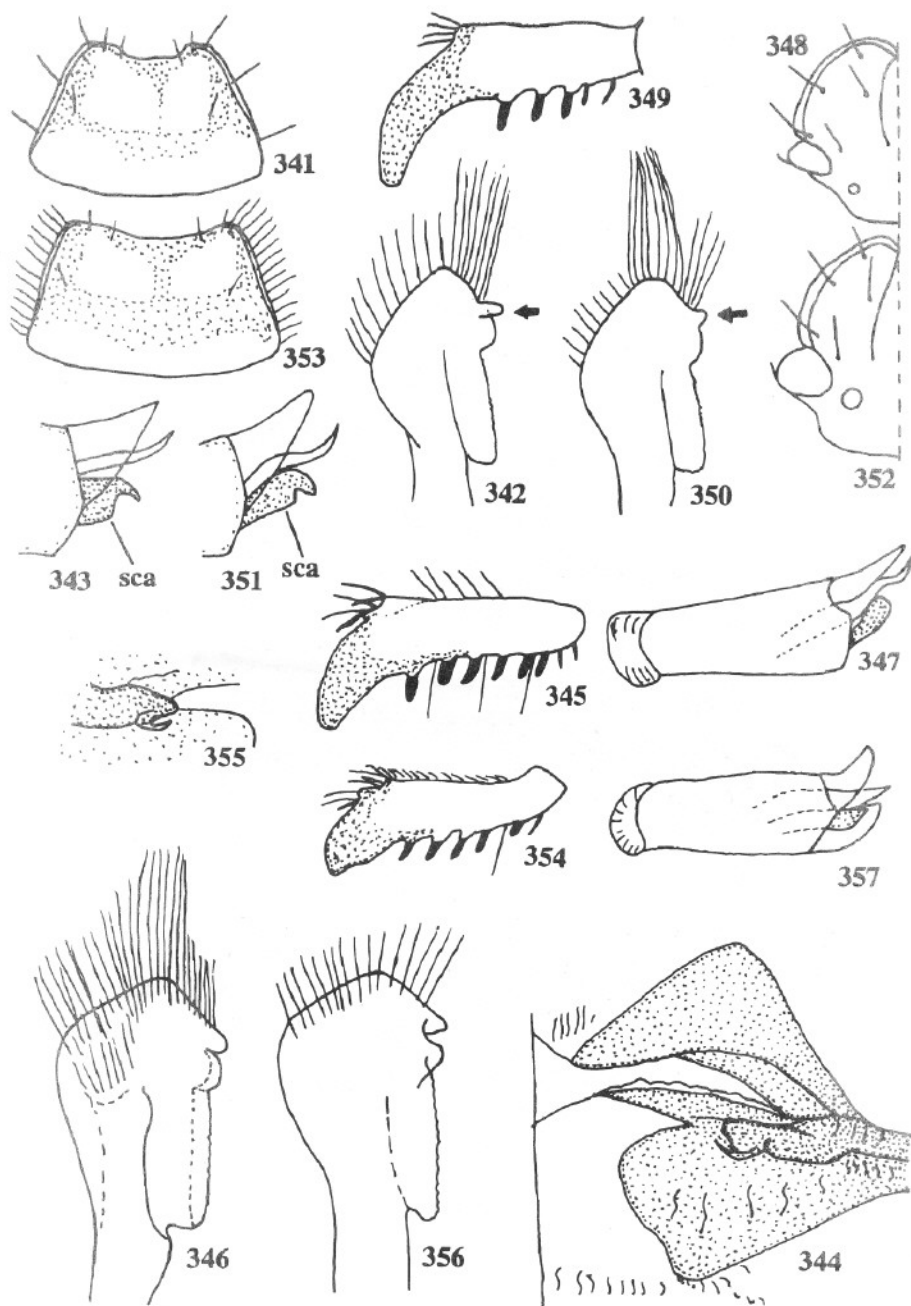


326. *Geotomus coiminatoricus*; 327. *Geotomus convexus*; 328. *Geotomus hildegardae*;  
 329-331. *Katakadia caliginosa*; 332-335. *Lactistes mediator*; 336-339. *Lactistes truncatoserratus*;  
 326-328, 333 - evaporatoria, 329 - head, 330, 337 - apex of peritreme, 331, 334, 338 - paramere (a - lateral view, b - front view), 332, 336 - anterior tibia, 335, 339 - penis.  
 (Figs. 333-335 from Lis, 1991b).



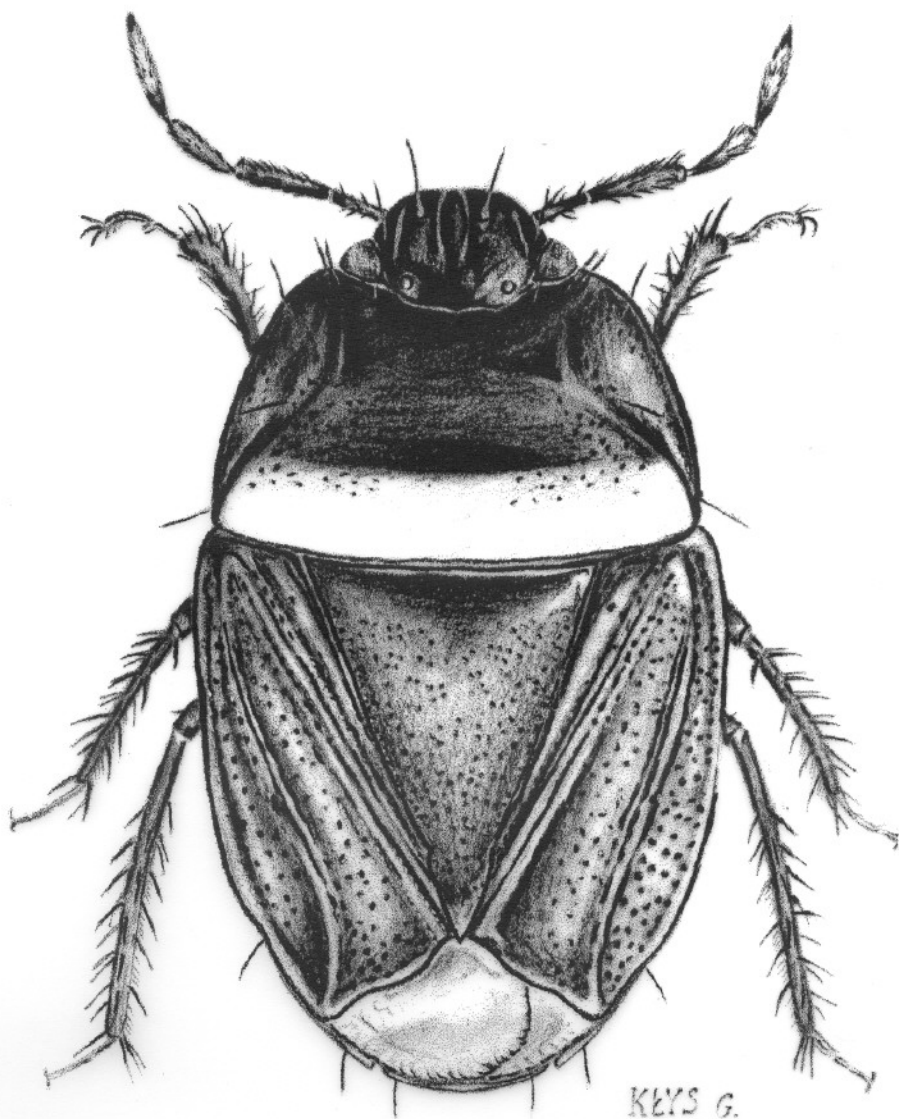
340. *Lactistes latus* - general habitus, dorsal view.



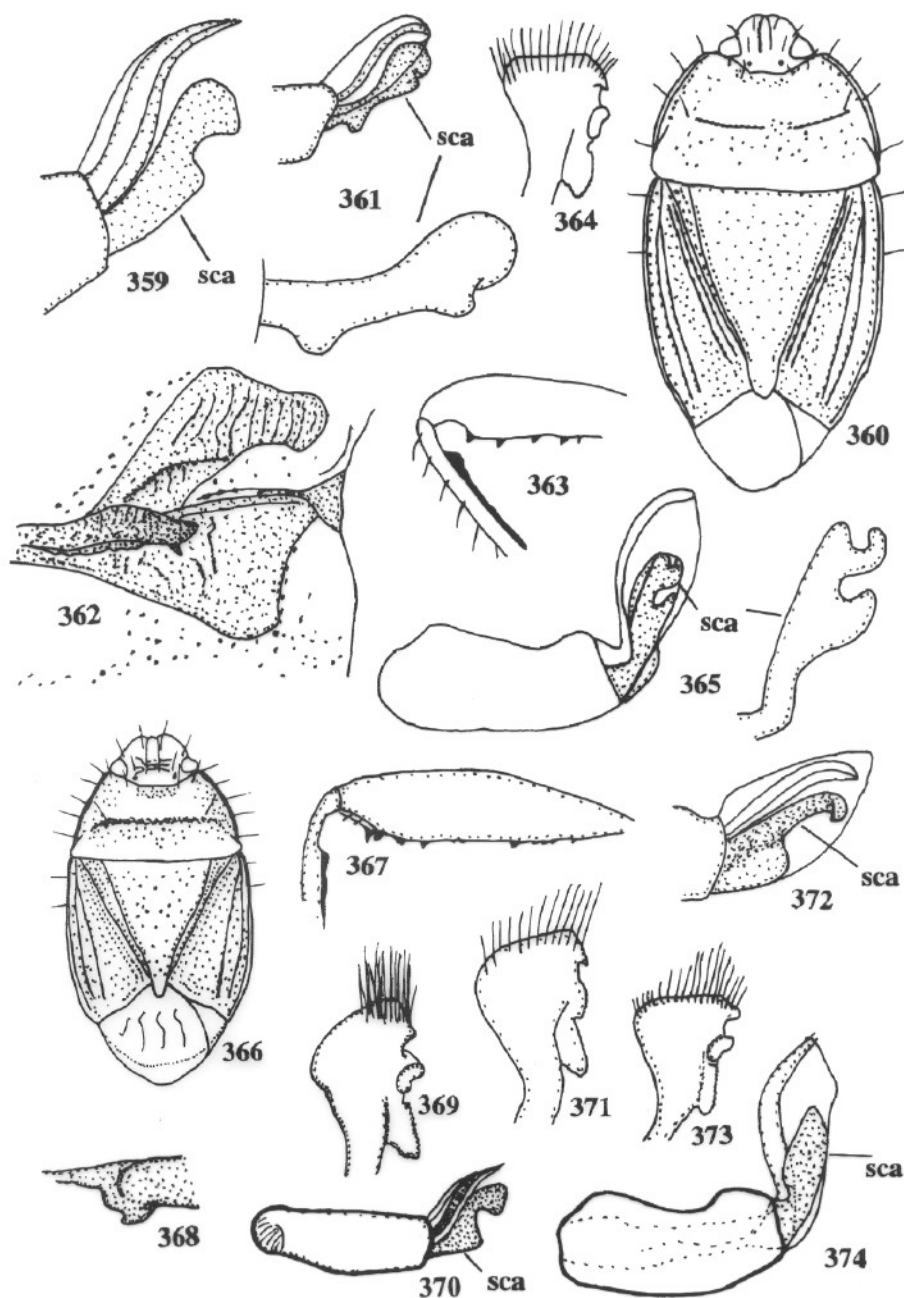


341. *Lactistes chinensis*; 342-343. *Lactistes falcolipes*; 344-347. *Lactistes latus*;  
348-351. *Lactistes minutus*; 352-357. *Lactistes rastellus*;

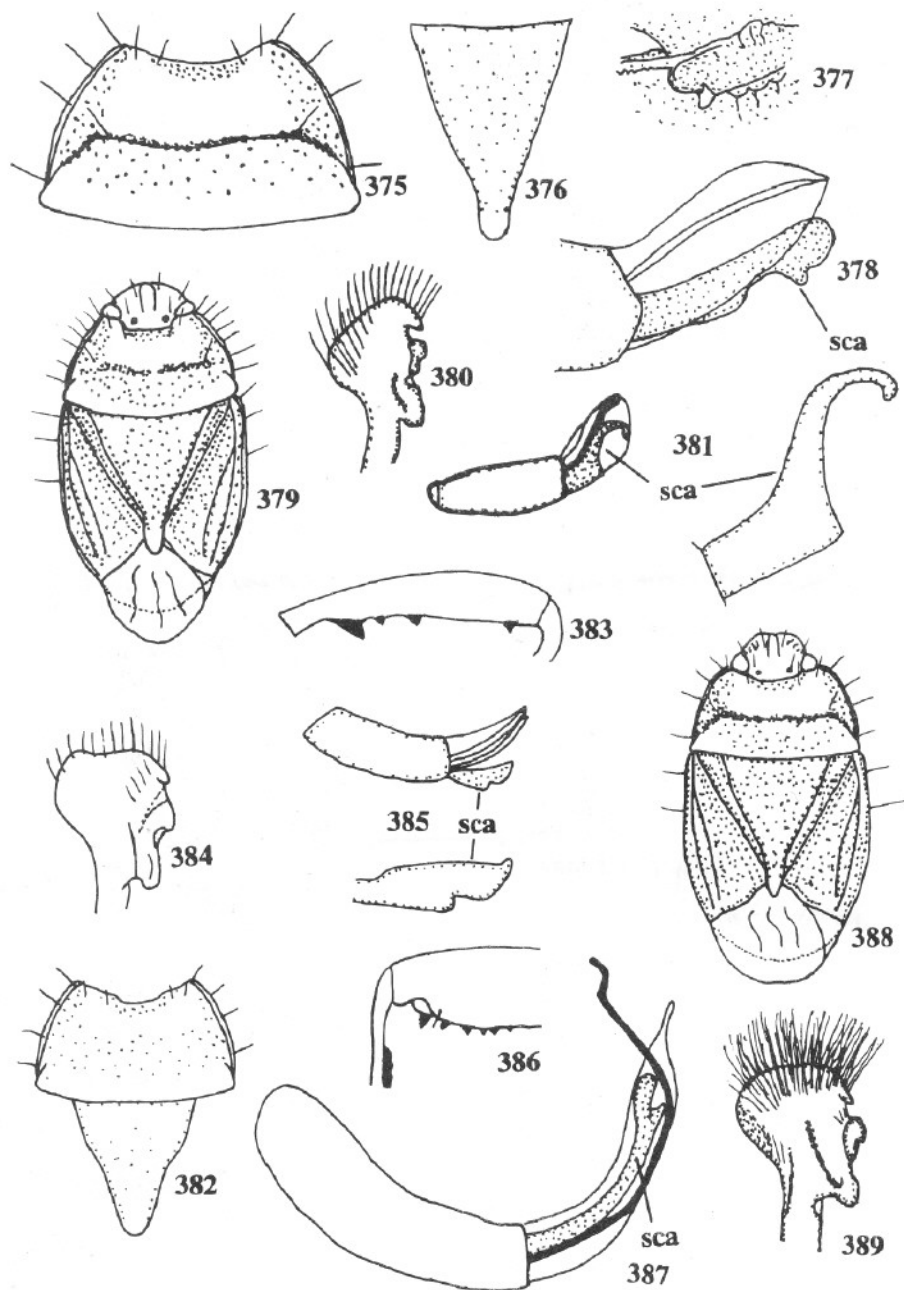
341, 353 - pronotum, 342, 346, 350, 356 - paramere, 343, 351 - apical part of penis (sca - 2nd conjunctival appendage), 344 - evaporatoria, 345, 349, 354 - anterior tibia, 347, 357 - penis, 348, 352 - head, 355 - apex of peritreme.



358. *Macroscytus celebensis* - general habitus, dorsal view.



359. *Macroscytus aequalis*; 360-361. *Macroscytus borneensis*; 362. *Macroscytus celebensis*; 363-365. *Macroscytus dalawanus*; 366-370. *Macroscytus dominiqueae*; 371-372. *Macroscytus japonensis*; 373-374. *Macroscytus noonadanae*;  
 359, 361, 372 - apical part of penis (sca - 2nd conjunctival appendage), 360, 366 - body outline, 362 - evaporatoria, 363, 367 - femur and tibia of posterior leg, 364, 369, 371, 373 - paramere, 365, 370, 374 - penis (sca - 2nd conjunctival appendage), 368 - apex of peritreme.  
 (Figs. 366-370 from Lis, 1991c, figs. 362, 373-374 from Lis, 1991e).

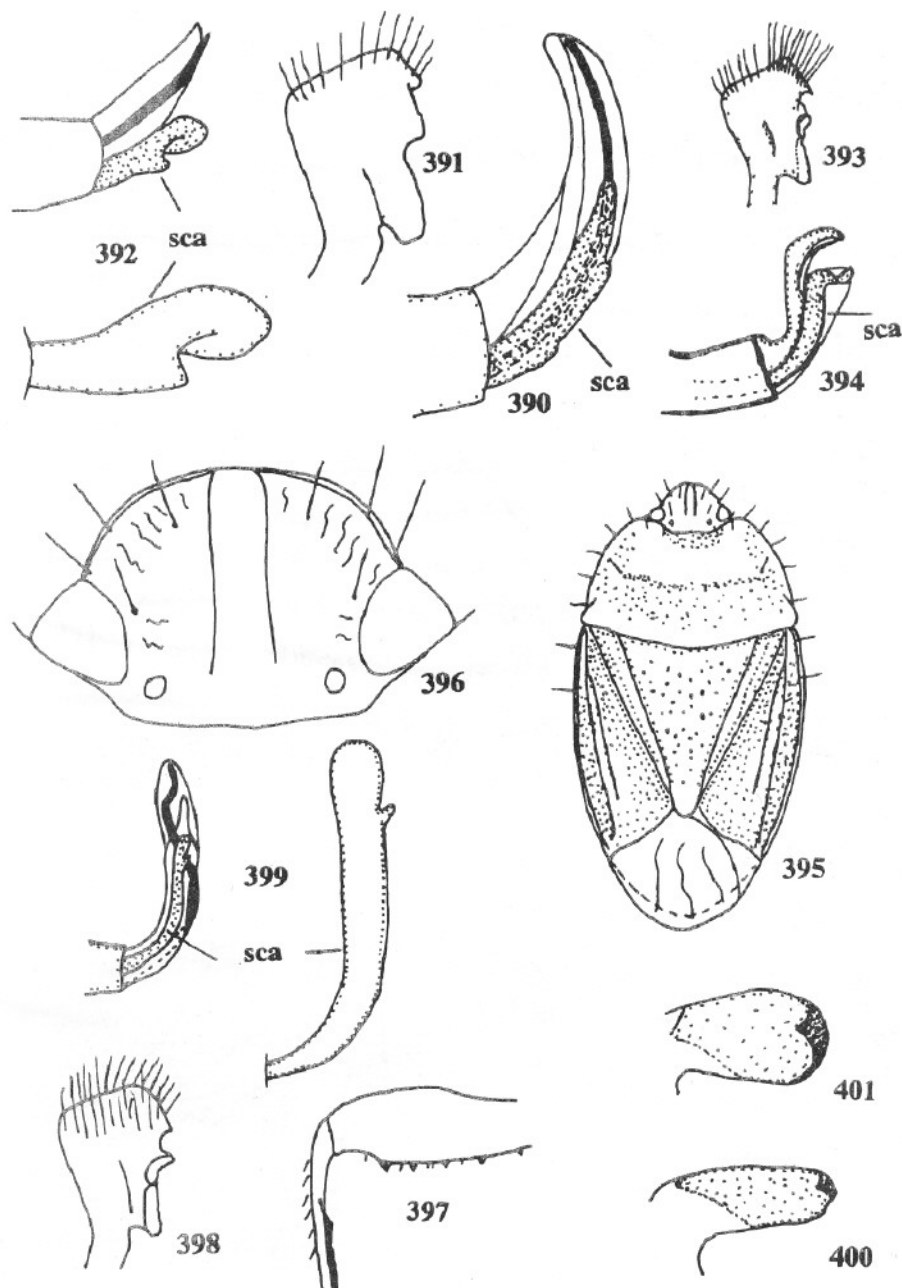


375. *Macroscytus noonadanae*; 376-378. *Macroscytus pfeifferi*; 379-381. *Macroscytus popovi*; 382-385. *Macroscytus subaeneus*; 386-387. *Macroscytus sumatranus*; 388-389.

*Macroscytus tenasserimus*:

375 - pronotum, 376 - scutellum, 377 - apex of peritreme, 378 - apical part of penis (sca - 2nd conjunctival appendage), 379, 388 - body outline, 380, 384, 389 - paramere, 381, 385, 387 - penis (sca - 2nd conjunctival appendage), 382 - pronotum and scutellum, 383, 386 - posterior femur.

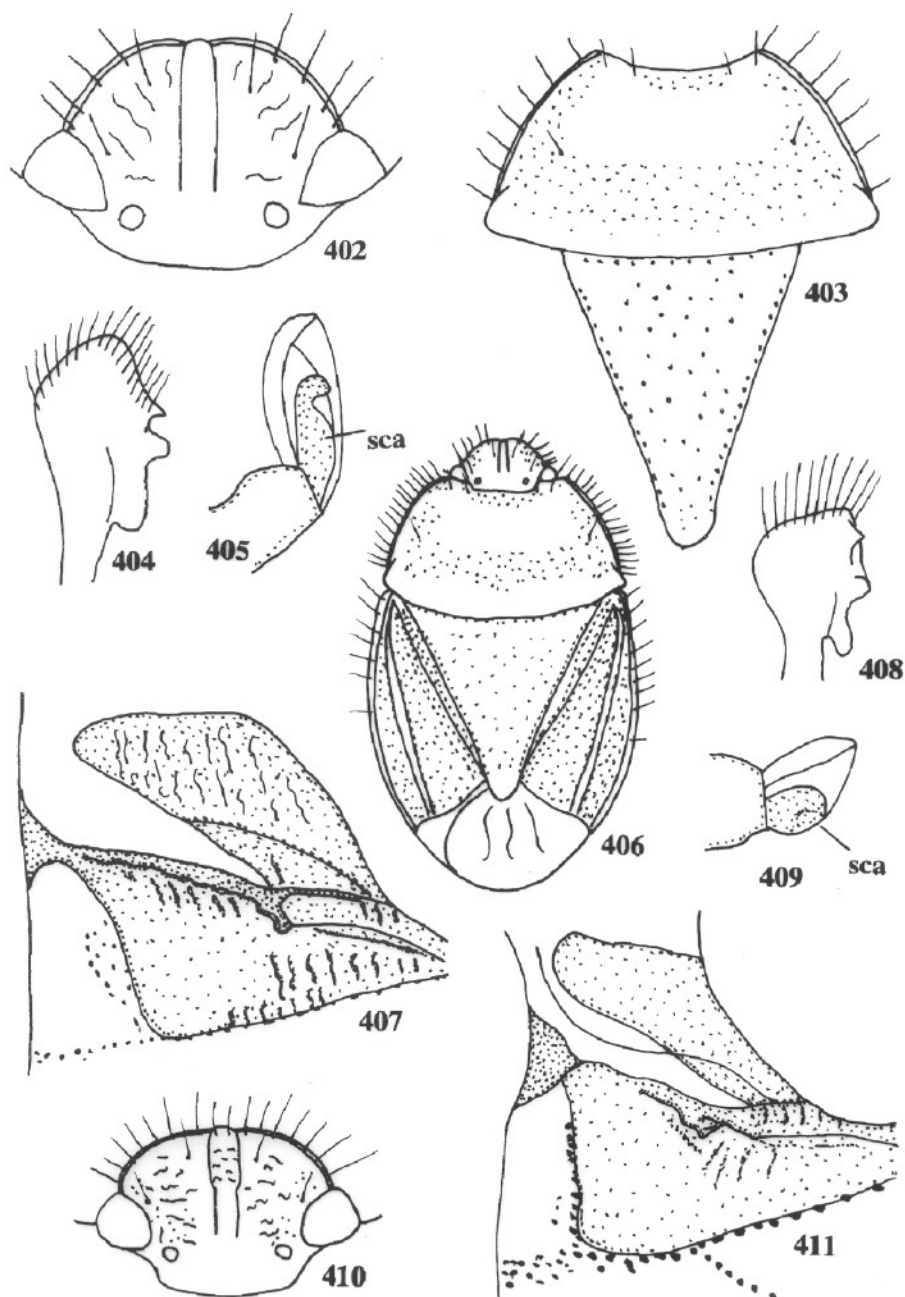
(Figs. 379-381, 388-389 from Lis, 1991c).



390. *Macroscytus tenasserimus*; 391-392. *Macroscytus transversus*; 393-394. *Macroscytus utaranus*; 395-399. *Macroscytus vietnamicus*; 400. *Macroscytus badius*; 401. *Macroscytus brunneus*;

390, 392, 394, 399 - apical part of penis (sca - 2nd conjunctival appendage), 391, 393, 398 - paramere, 395 - body outline, 396 - head, 397 - femur and tibia of posterior leg, 400, 401 - 2nd conjunctival appendage.

(Figs. 393-394 from Lis, 1991e, figs. 400-401 from Lis, 1991b).

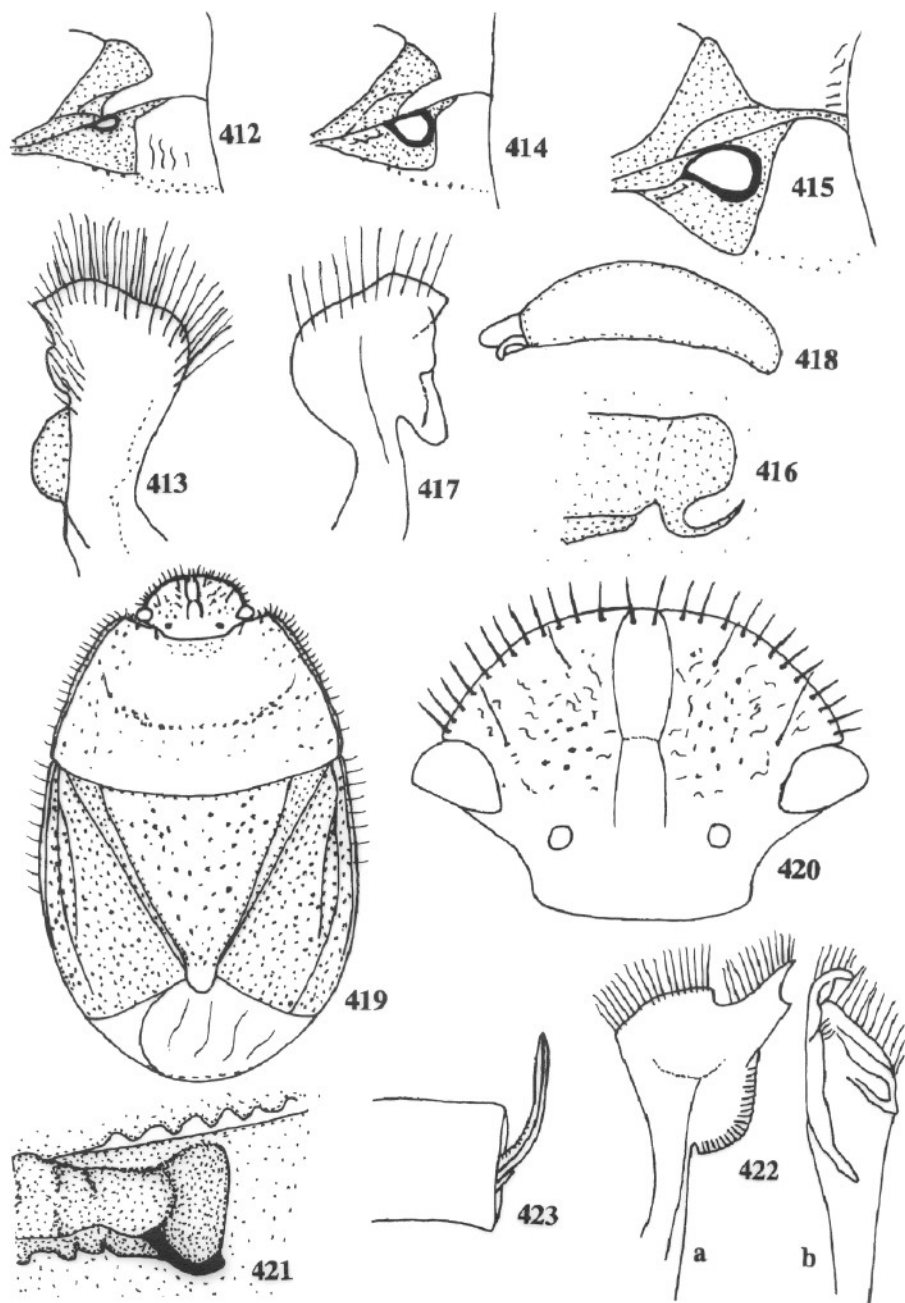


402-405. *Macroscytus javanus*; 406-409. *Macroscytus nigroaeneus*;  
410-411. *Macroscytus lansbergi*.

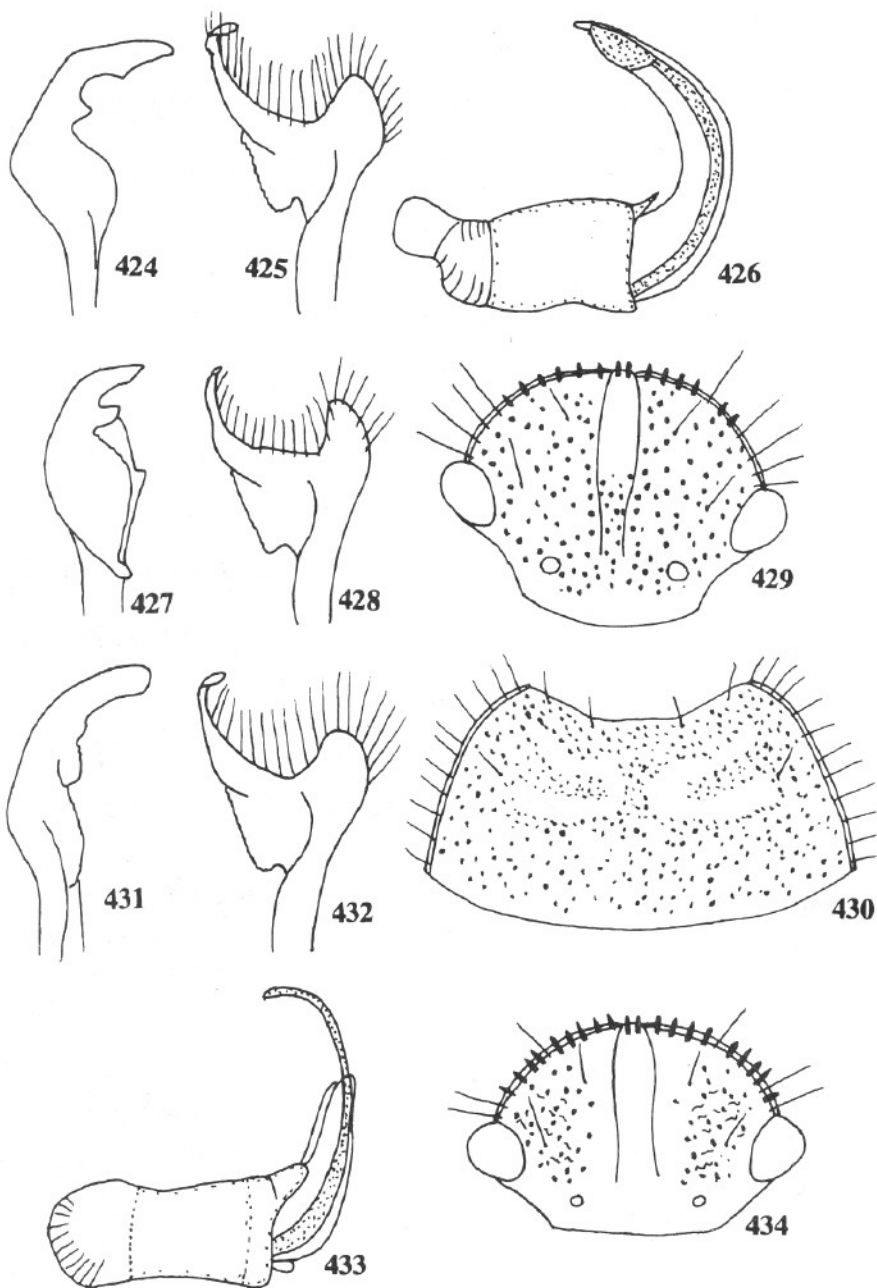
402, 410 - head, 403 - pronotum and scutellum, 404, 408 - paramere, 405, 409 - apical part of penis (sca - 2nd conjunctival appendage), 406 - body outline, 407, 411 - evaporatoria.

(Figs. 406-407 and 410-411 from Lis, 1991b).

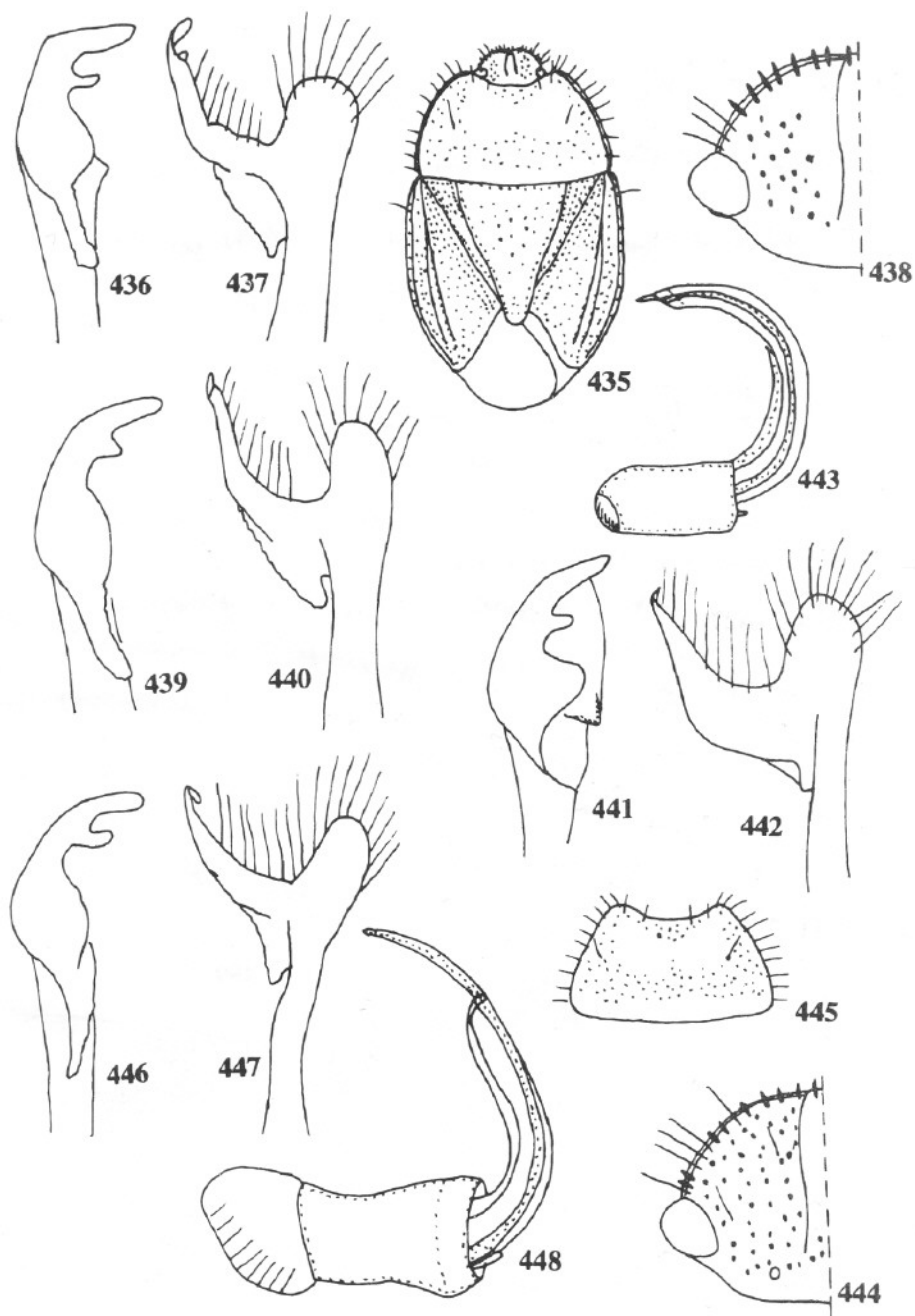




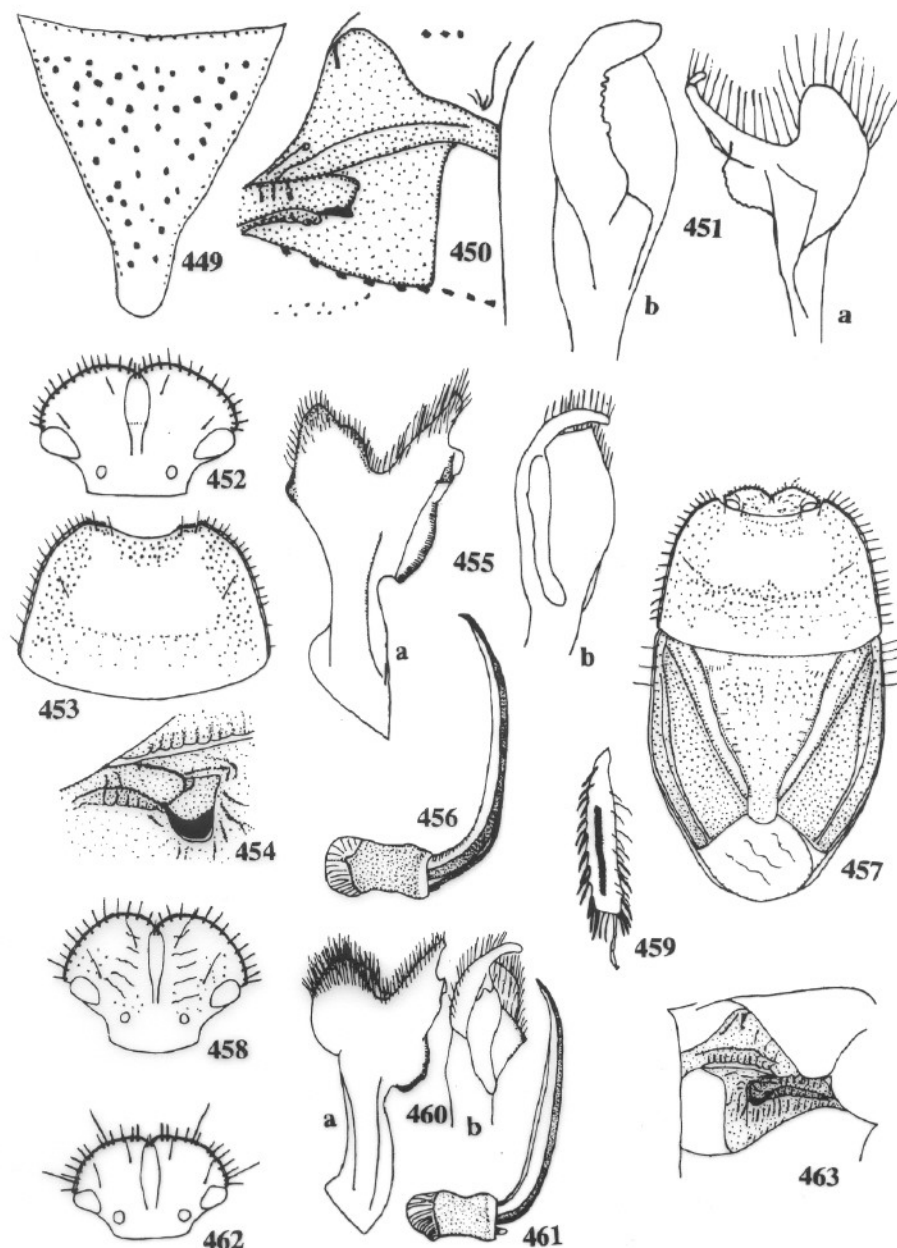
412-413. *Microporus laticeps*; 414. *Microporus nigrilus*; 415. *Microporus vietnamicus*;  
 416-418. *Paraethus ajmericus*; 419-423. *Pseudoscorpripes nilgiricus*:  
 412,414,415 - evaporatoria, 413,417,422 - paramere (a - lateral view, b - front view), 416,421 - apex of  
 peritreme, 418 - penis, 419 - body outline, 420 - head, 423 - apical part of penis.  
 (Figs. 419-422 from Lis, 1990b).



424-426. *Pseudoscoparipes birmanus*; 427-428. *Pseudoscoparipes fraterculus*;  
 429-433. *Pseudoscoparipes himalayensis*; 434. *Pseudoscoparipes kinabalensis*:  
 424, 427, 431 - left paramere, front view, 425, 428, 432 - right paramere, lateral view, 426, 433 - penis,  
 429, 434 - head, 430 - pronotum.



435-437. *Pseudoscoparipes kinabalensis*; 438-440. *Pseudoscoparipes nigrinus*;  
 441-443. *Pseudoscoparipes obscurus*; 444-448. *Pseudoscoparipes schaeferi*;  
 435 - body outline, 436, 439, 441, 446 - left paramere, front view, 437, 440, 442, 447 - right paramere,  
 lateral view, 438, 444 - head, 443, 448 - penis, 445 - pronotum.

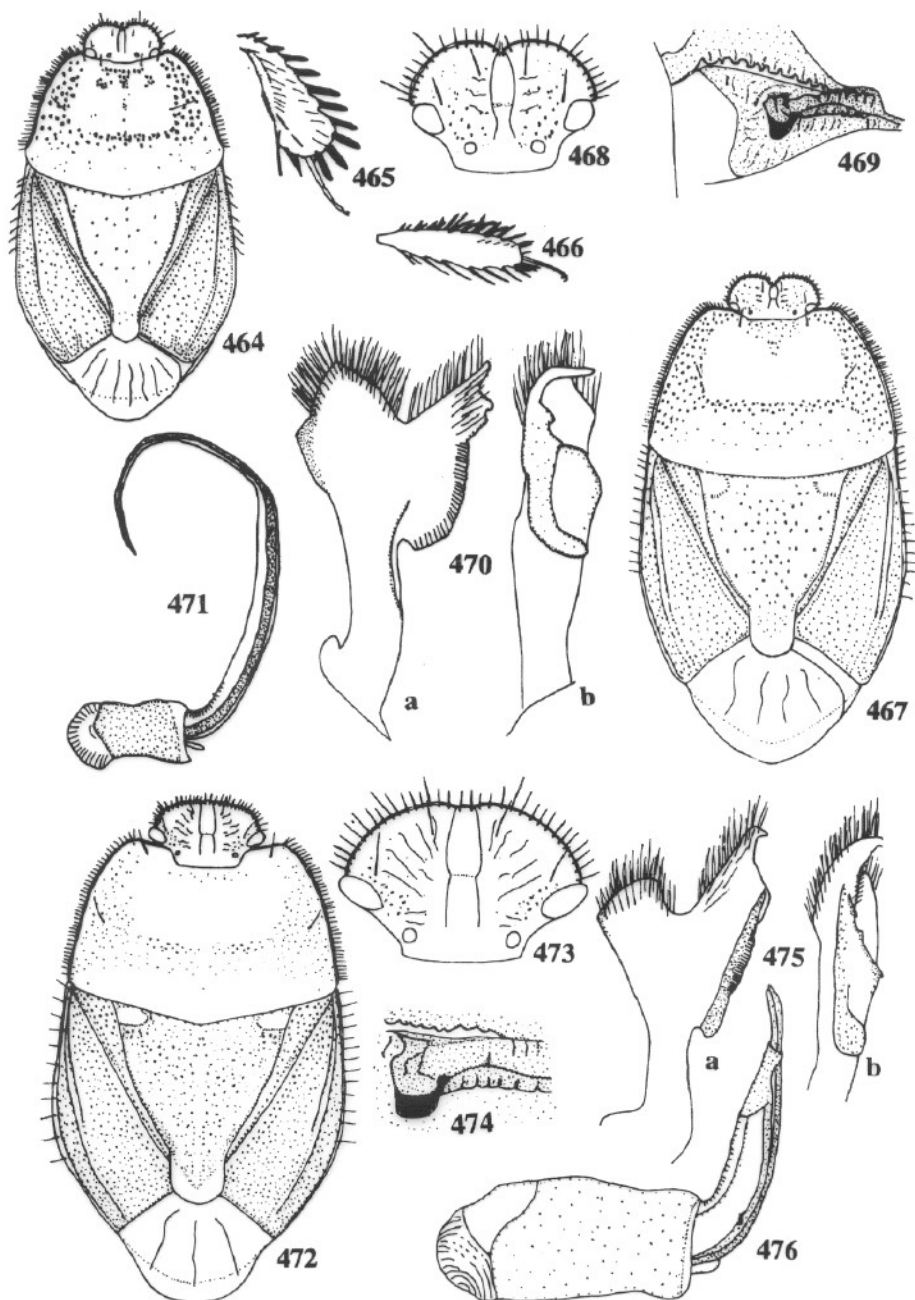


449-451. *Pseudoscoparipes vollenhoveni*; 452-456. *Scoparipes conviva*; 457-461.

*Scoparipes dissimilis*; 462-463. *Scoparipes latipes*:

449 - scutellum, 450, 463 - evaporatoria, 451, 455, 460 - paramere (a - lateral view, b - front view), 452, 458, 462 - head, 453 - pronotum, 454 - apex of peritreme, 456, 461 - penis, 457 - male, body outline, 459 - male posterior tibia.

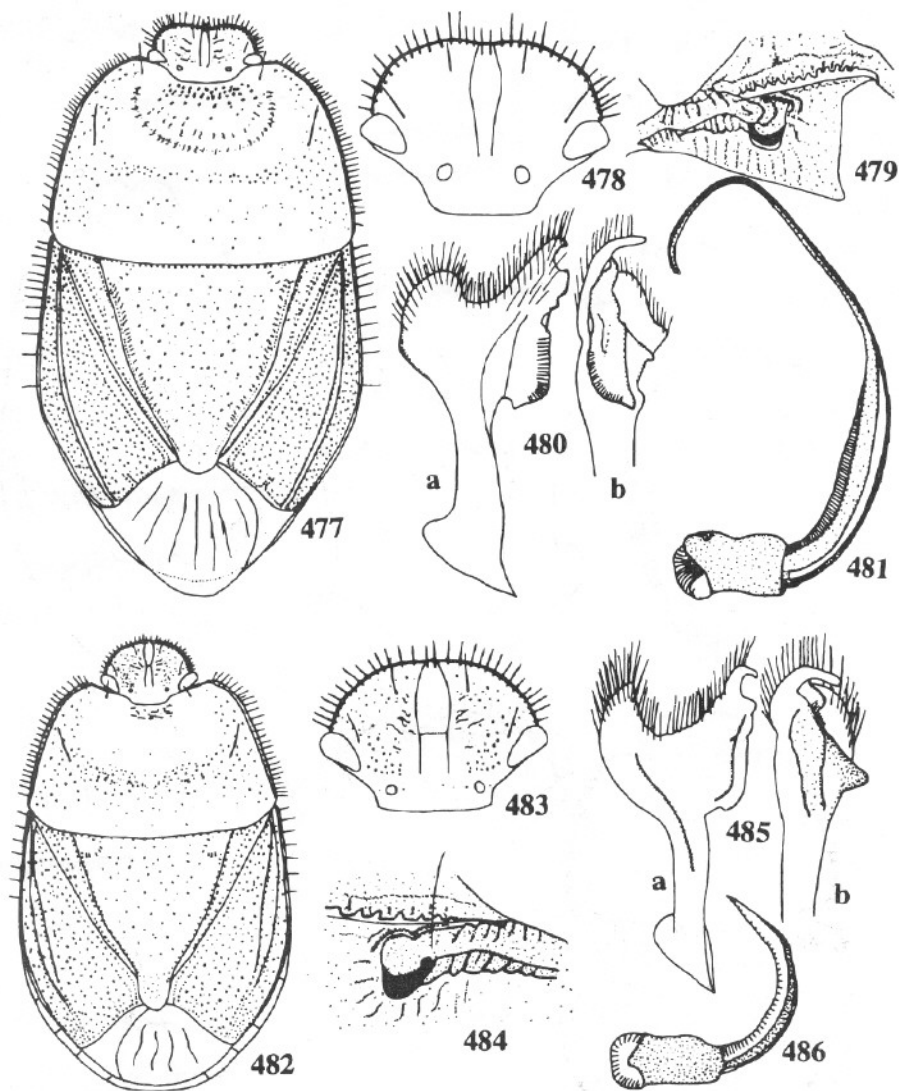
(Figs. 452-463 from Lis, 1990a).



464-466. *Scoparipes latipes*; 467-469. *Scoparipes rufipes*; 470-471. *Scoparipes pseudinsignis*; 472-476. *Scoparipes affinis*:

464, 467, 472 - body outline, 465 - anterior tibia, 466 - female posterior tibia, 468, 473 - head, 469 - evaporatoria, 470, 475 - paramere (a - lateral view, b - front view), 471, 476 - penis, 474 - apex of peritreme.

(Figs. 464-476 from Lis, 1990a).

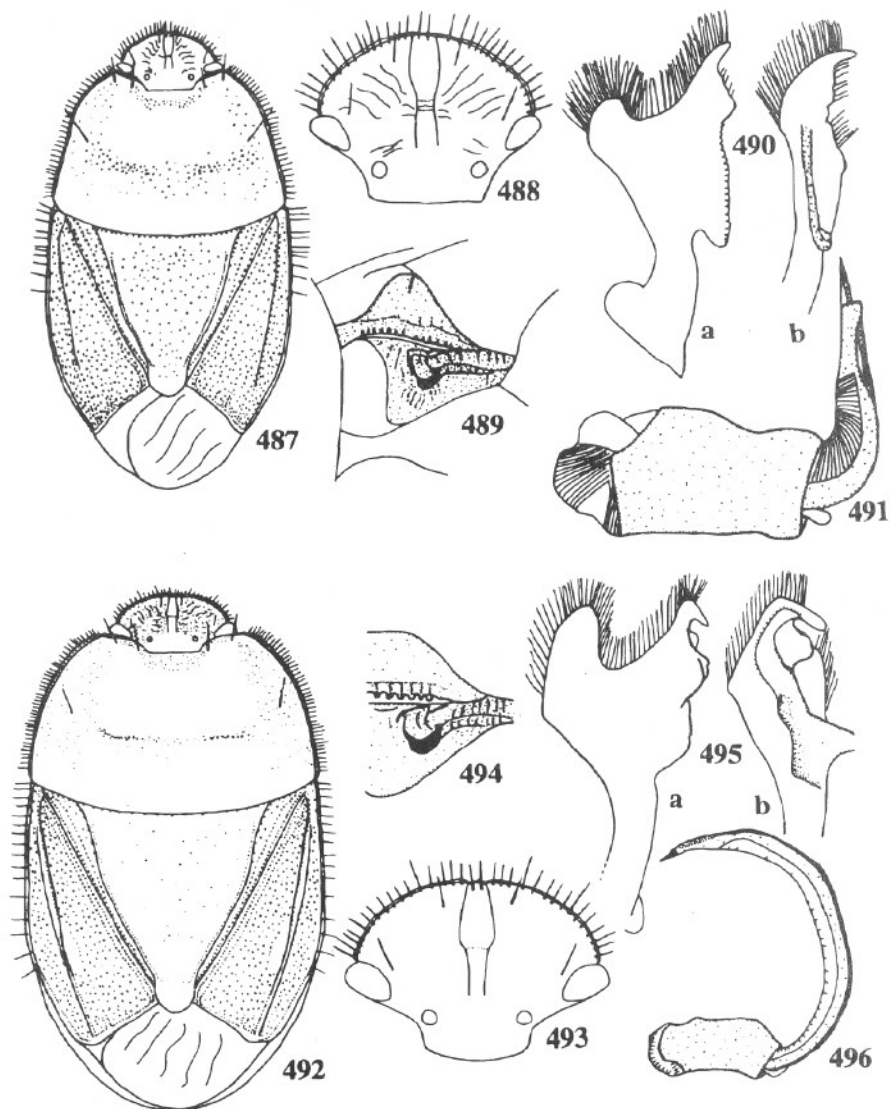


477-481. *Scaparipes insignis*; 482-486. *Scaparipes laosanus*:

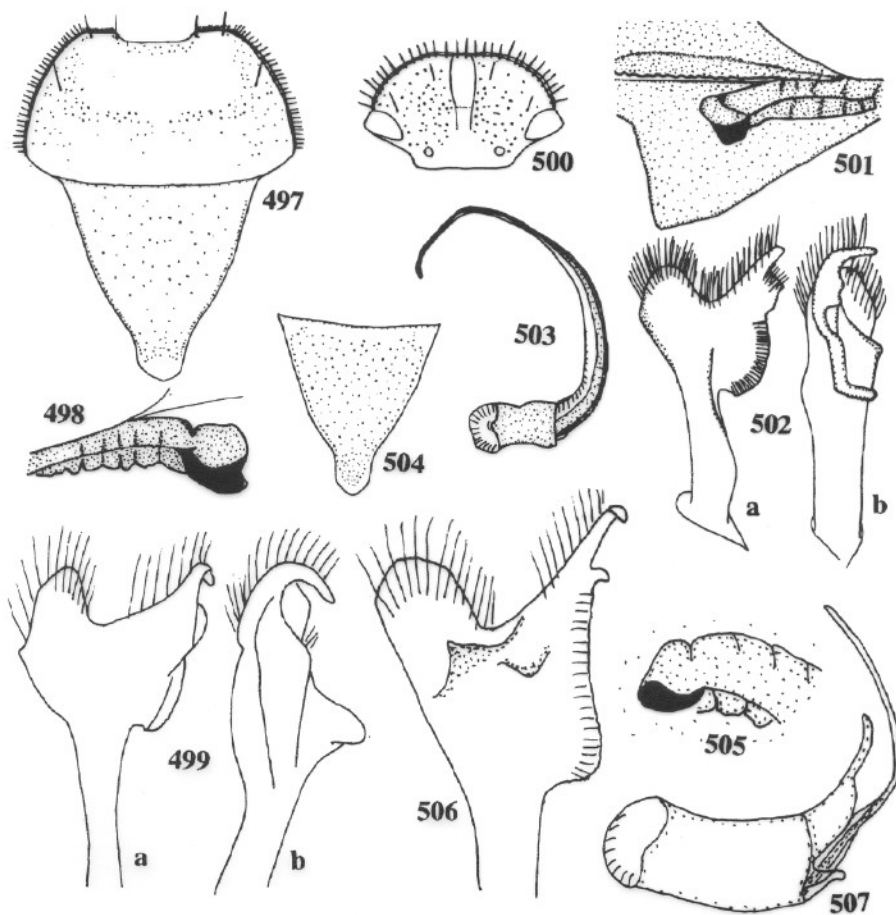
477, 482 - body outline, 478, 483 - head, 479 - evaporatoria, 480, 485 - paramere (a - lateral view, b - front view), 481, 486 - penis, 484 - apex of peritreme.

(Figs. 477-486 from Lis, 1990a).





487-491. *Scaphisoma longirostris*; 492-496. *Scaphisoma politus*:  
 487, 492 - body outline, 488, 493 - head, 489, 494 - evaporatoria, 490, 495 - paramere (a - lateral view,  
 b - front view), 491, 496 - penis.  
 (Figs. 487-496 from Lis, 1990a).

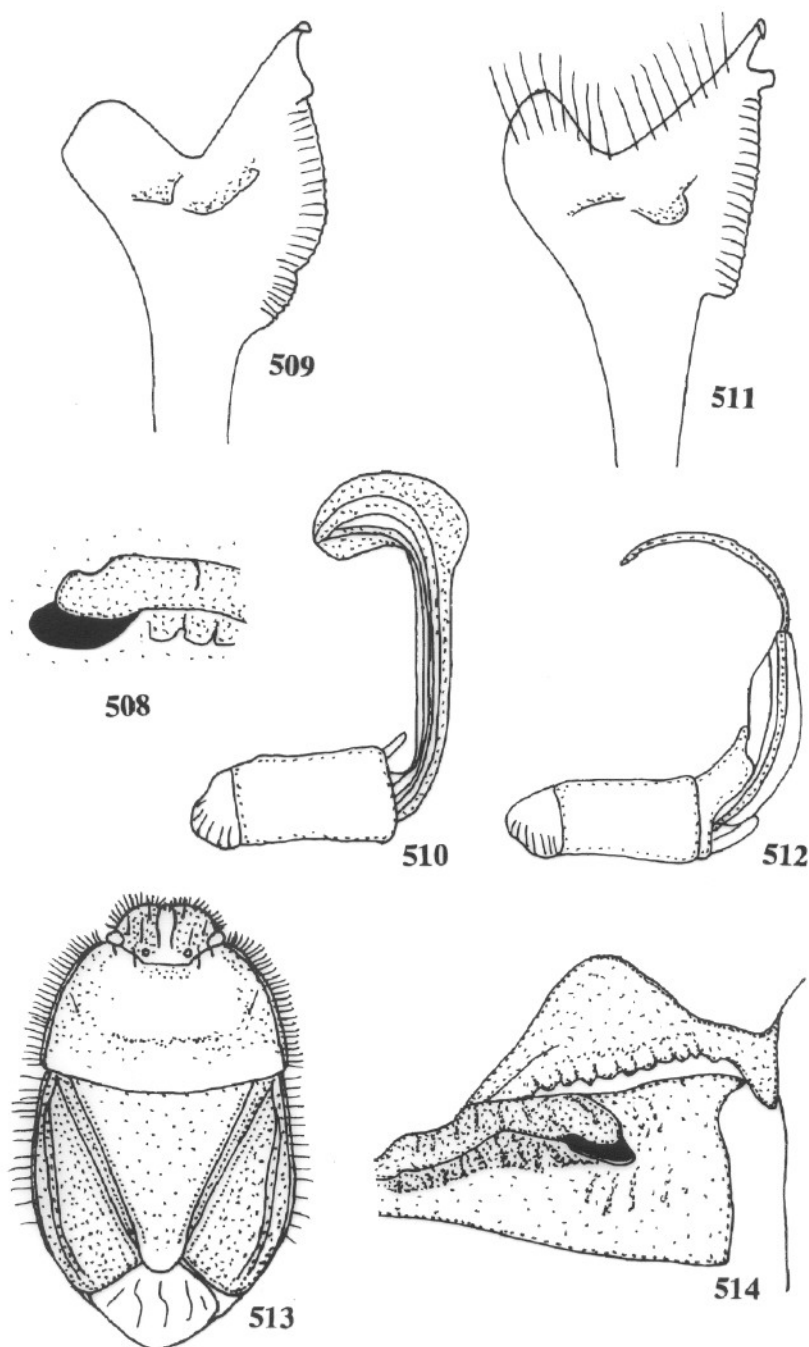


497-499. *Scoparipes salvazai*; 500-503. *Scoparipes stygius*; 504. *Scoparipes subitus*;

505-507. *Scoparipoides ceylonicus*:

497 - pronotum and scutellum, 498, 505 - apex of peritreme, 499, 502, 506 - paramere (a - lateral view, b - front view), 500 - head, 501 - evaporatoria, 503, 507 - penis, 504 - scutellum.

(Figs. 497-498, 500-504 from Lis, 1990a).



508-510. *Scaparipoides curviductus*; 511-512. *Scaparipoides scutellatus*;  
 513-514. *Scaparipoides yangi*.

508 - apex of peritreme, 509, 511 - paramere, 510, 512 - penis, 513 - body outline, 514 - evaporatoria.  
 (Figs. 513-514 from LIS, 1990b).